

NETFLOW IP System Performance Test July 2007

Software: NETFLOW IP System V2.6.3

Hardware: Intel core2 Quad 2.4 GHz

Summary

In order to test the performance of NETFLOW **IP System** on an Intel core2 Quad 2.4GHz hardware configuration, the following was measured in the scenarios:

- Number of recordable frames per second
- CPU load
- Network load

Test Configuration

Software:	NETFLOW-Ip-System-Multi-2.6.3
CPU:	Intel Core 2 Quad Q6600 @ 2400 MHz
Memory:	1024 MB (2 x 512 DDR2-SDRAM)
Ethernet:	Marvell Yukon 88E8052 PCI-E ASF Gigabit Ethernet Controller
Hard Disk:	ST3250620A (250 GB)
Graphic card:	ATI Technologies Inc Radeon X1300 Series
Operating System:	Windows XP Professional SP2

Test Case: 64 IP cameras Performance Test

With up to 1280 frames per second (equaling 20 frames per second if using 64 cameras) of recorded images, the test shows that even a regular single-CPU PC can be used for running a NETFLOW IP surveillance system.

Cameras used

A total of 64 cameras from a range of manufacturers were used for the test:

NO	Model	Format	Frame Rate	Quality	Resolution
1	LevelOne WCS-2040	MPEG4	20	Normal	Normal
2	LevelOne WCS-2040	MPEG4	20	Normal	Normal
3	LevelOne WCS-2040	MPEG4	20	Normal	Normal
4	LevelOne WCS-2040	MPEG4	20	Normal	Normal
5	LevelOne FCS-1081	MPEG4	20	GOOD	352*240
6	LevelOne FCS-1081	MPEG4	20	GOOD	352*240
7	LevelOne FCS-1081	MPEG4	20	GOOD	352*240
8	LevelOne FCS-1081	MPEG4	20	GOOD	352*240
9	LevelOne FCS-4000	MPEG4	20	GOOD	352*240
10	LevelOne FCS-4000	MPEG4	20	GOOD	352*240
11	LevelOne FCS-4000	MPEG4	20	GOOD	352*240
12	LevelOne FCS-4000	MPEG4	20	GOOD	352*240
13	LevelOne FCS-1010	H263	20	Normal	Normal
14	LevelOne FCS-1010	H263	20	Normal	Normal
15	LevelOne FCS-1010	H263	20	Normal	Normal
16	LevelOne WCS-2010	H263	20	Normal	Normal
17	LevelOne WCS-2010	H263	20	Normal	Normal
18	LevelOne WCS-2010	H263	20	Normal	Normal
19	LevelOne WCS-2010	H263	20	Normal	Normal
20	LevelOne WCS-2070	MJPEG	20	Normal	Normal

21	LevelOne WCS-2070	MJPG	20	Normal	Normal
22	LevelOne WCS-2070	MJPG	20	Normal	Normal
23	LevelOne WCS-2070	MJPG	20	Normal	Normal
24	LevelOne WCS-2070	MJPG	20	Normal	Normal
25	LevelOne FCS-3000	MPEG4	20	Normal	Normal
26	LevelOne FCS-3000	MPEG4	20	Normal	Normal
27	LevelOne FCS-3000	MPEG4	20	Normal	Normal
28	LevelOne FCS-3000	MPEG4	20	Normal	Normal
29	LevelOne WCS-2060	MPEG4	20	Normal	320*240
30	LevelOne WCS-2060	MPEG4	20	Normal	320*240
31	LevelOne WCS-2060	MPEG4	20	Normal	320*240
32	LevelOne WCS-2060	MPEG4	20	Normal	320*240
33	LevelOne WCS-2030	MPEG4	20	Normal	320*240
34	LevelOne WCS-2030	MPEG4	20	Normal	320*240
35	LevelOne WCS-2030	MPEG4	20	Normal	320*240
36	LevelOne WCS-2030	MPEG4	20	Normal	320*240
37	AXIS 207MW	MJPG	20	20	320*240
38	AXIS 207MW	MJPG	20	20	320*240
39	AXIS 207MW	MJPG	20	20	320*240
40	AXIS 207MW	MJPG	20	20	320*240
41	AXIS 210A	MJPG	20	20	320*240
42	AXIS 210A	MJPG	20	20	320*240

43	AXIS 207	MJPG	20	20	320*240
44	AXIS 207	MJPG	20	20	320*240
45	VIVOTEK VS2403	MJPG	20	Normal	Normal
46	VIVOTEK VS2403	MJPG	20	Normal	Normal
47	VIVOTEK VS2403	MJPG	20	Normal	Normal
48	VIVOTEK VS2403	MJPG	20	Normal	Normal
49	VIVOTEK Pz61x2	MPEG4	20	Normal	Normal
50	VIVOTEK Pz61x2	MPEG4	20	Normal	Normal
51	VIVOTEK Pz61x2	MPEG4	20	Normal	Normal
52	VIVOTEK Pz61x2	MPEG4	20	Normal	Normal
53	VIVOTEK IP7135	MPEG4	20	Normal	320*240
54	VIVOTEK IP7135	MPEG4	20	Normal	320*240
55	VIVOTEK IP7135	MPEG4	20	Normal	320*240
56	VIVOTEK IP7135	MPEG4	20	Normal	320*240
57	VIVOTEK IP7135	MPEG4	20	Normal	320*240
58	VIVOTEK IP7135	MPEG4	20	Normal	320*240
59	PIXORD 1401	MJPG	20	15	CIF
60	PIXORD 1401	MJPG	20	15	CIF
61	PIXORD 1401	MJPG	20	15	CIF
62	PIXORD 4000	MJPG	20	15(MAX: 30)	CIF
63	SONY SNC-P5	MJPG	20	Medium	320*240
64	SONY SNC-P5	MJPG	20	Medium	320*240

Test Scope

The test was performed with the purpose of determining performance of NETFLOW IP surveillance system with the above hardware configuration. The primary objective of the test was to measure how many frames per second were recorded with a specific number of cameras, with a specific resolution, and with image sizes within a specific range. The CPU load, the network load and the recorded number of frames per second was measured. An exact measurement of frames per second was obtained by determining how many frames were recorded in 300 seconds, then calculating the average number of frames per second.

Test Details

Testing with 64 cameras. Resolution: 320x240. Image Size: 6-10 KB (varying from camera to camera as compression differs). Recording Option: Always Record.

Results from Test with a Resolution of 320x240

320x240	Quality	Record Option	CPU Load	Bandwidth
64 IP camera	Normal	Always	65%	40~50 Mbps
64 IP camera	Highest	Always	67%	40~50 Mbps

Conclusion

Considering the hardware used, a recorded 1280 frames per second can be considered a very satisfying result. This test thus shows that even a regular single-CPU PC can be used for running a NETFLOW IP surveillance system.