Lenel Network Video Recorder Specifications

1U CHASSIS

DVC-1U Chassis – 1U, 19-inch rack mount chassis, Xeon Core 2 Quad x3230, 2.66GHz, 8MB L2 Cache, 1066MHz FSB processor with Windows XP Professional operating system, 2GB DDR2 (4 x 512MB) 667Mhz ECC SDRAM, Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (1) 80GB internal hard drive for OS, Up to 3 SATA 7,200 rpm hard drives for video storage can be added, (2) serial ports, (1) parallel port, (3) USB 2.0 port, 400W, 6A power supply, keyboard, optical mouse, and rack mount rail kit.

- Physical Dimensions: 19" (W) x 20.5" (D) 1.75" (H)
- System Under Load: 575 BTU's
- See Cameras per Network Video Recorder Chart for recommended system channel capabilities
        + PC-LNR8-1U-1   + PC-LNR8-1U-3

2U CHASSIS

DVC-2U Chassis – 2U, 19-inch rack mount chassis, Intel Celeron Dual Core E1400, 2.0GHz, 512k L2 Cache, 800MHz FSB processor with Windows XP Professional operating system, 2GB DDR2 (4 x 512MB) 667Mhz ECC SDRAM, Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (1) 80GB internal hard drive for OS, (1) DVB-16H264 16 channel analog video capture board, Up to 3 SATA 7,200 rpm hard drives for video storage can be added, (2) serial ports, (1) parallel port, (3) USB 2.0 port, 300W, 6A power supply, keyboard, optical mouse, and rack mount rail kit.

- Physical Dimensions: 16.75" (W) x 19.5" (D) 3.5" (H)
- System Under Load: 845 BTU's
- Option to configure up to 8 IP video channels
  (IP channel licenses not included)
        + HVR-2UCCXX1600-1   + HVR-2UCCXX1600-4

3U CHASSIS

DVC-EX2 Chassis – 3U, 19-inch rack mount chassis, Core 2 Duo E8400, 3.0GHz, 6MB L2 Cache, 1333MHz FSB processor with Windows XP Professional operating system, 2GB DDR2 (4 x 512MB) 667Mhz ECC SDRAM; Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (1) 80GB internal hard drive for OS, 3Ware 9650SE-8LPML Raid controller, Up to 8 SATA 7,200 rpm hard drives for video storage can be added, (2) USB 2.0 ports, 350W, 8-5A redundant power supplies, keyboard, optical mouse and rack mount rail kit.

- Optional CPU Upgrade to Core 2 Quad Q9650, 3.0GHz,
- Physical Dimensions: 19" (W) x 28" (D) x 5.25" (H)
- System Under Load: 1,043 BTU's
- Hybrid configuration available with one or two DVB-16H264 16 channel analog video capture boards
- See Cameras per Network Video Recorder Chart for recommended system channel capabilities
        + HVR-3UCCXX1600-4   + PC-LNR8-3U-4
        + HVR-3UCCXX1600-8   + PC-LNR8-3U-8
        + HVR-3UCCXX3200-8

3U CHASSIS

DVC-EX3 Chassis – 3U, 19-inch rack mount chassis, Dual Xeon (Nehalem) E5520, 2.26GHz, 5.86 GT/s processors with Windows Server 2003 R2 operating system, 6GB DDR3 (6 x 1GB) 1066Mhz ECC SDRAM; Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (2) 80GB internal hard drive in a RAID for OS, 3Ware 9690SA-8I Raid controller, Up to 16 SATA 7,200 rpm hard drives for video storage can be added, (2) USB 2.0 ports, 760W, 8-5A redundant power supplies, keyboard, optical mouse and rack mount rail kit.

- Physical Dimensions: 19" (W) x 26" (D) x 5.25" (H)
- System Under Load: 1,562 BTU's
- Hybrid configuration available with one or two DVB-16H264 16 channel analog video capture boards
- See Cameras per Network Video Recorder Chart for recommended system channel capabilities
        + HVR-3U16CCXX1600-8   + PC-LNR8-3U16-8
        + HVR-3U16CCXX3200-8   + PC-LNR8-3U16-16
        + HVR-3U16CCXX1600-16
        + HVR-3U16CCXX3200-16

Lenel Digital Video Recorder Specifications

3U CHASSIS

DVC-EX Chassis – 3U, 19-inch rack mount chassis, Intel 630 Pentium 4 Single Core 3.0GHz, 1MB L2 Cache, 800MHz FSB processor with Windows XP Professional operating system, 1GB DDR2 (2 x 512MB) 533Mhz ECC SDRAM; Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (1) 80GB internal hard drive for OS, Up to 8 SATA 7,200 rpm hard drives for video storage can be added, (2) serial ports, (1) parallel port, (4) USB 2.0 ports, 350W, 8-5A redundant power supplies, keyboard, optical mouse and rack mount rail kit.

- Physical Dimensions: 19" (W) x 28" (D) x 5.25" (H)
- System Under Load: 1,043 BTU's
- Hybrid configuration available with one DVB-408 eight channel analog video capture board and up to 8 IP channels
- Hybrid configurations available with up to four DVB-444 four channel analog video capture boards and up to 16 IP channels
        + DVR-408-EX-8   + DVR-444-EX-12
        + DVR-408-EX-16   + DVR-444-EX-16
        + UVS408IPEX0808   + UVS444IPEX0404
        + DVR-444-EX-4   + UVS444IPEX0808
        + DVR-444-EX-8   + UVS444IPEX1616

4U CHASSIS

DVC-ST Chassis – 4U, 19-inch rack mount chassis, Intel 630 Pentium 4 Single Core 3.0GHz, 1MB L2 Cache, 800MHz FSB processor with Windows XP Professional operating system, 1GB DDR2 (2 x 512MB) 533Mhz ECC SDRAM; Dual 10/100/1000 Ethernet Ports, CD/RW-DVD/R ROM, (1) 80GB internal hard drive for OS, Up to 3 SATA 7,200 rpm hard drives for video storage can be added, (2) serial ports, (1) parallel port, (4) USB 2.0 ports, 400W, 7A power supply, keyboard, optical mouse and rack mount rail kit.

- Physical Dimensions: 19" (W) x 18.5" (D) x 7" (H)
- System Under Load: 1,139 BTU's
- Hybrid configuration available with one DVB-408 eight channel analog video capture board and up to 8 IP channels
- Hybrid configuration available with up to two DVB-444 four channel analog video capture boards and up to 8 IP channels
        + DVR-408-ST-8   + DVR-444-ST-8
        + DVR-408-ST-16   + UVS444IPST0404
        + UVS408IPST0808   + UVS444IPST0808
        + DVR-444-ST-4

Video Viewing Client Specifications

STANDARD CLIENT (Config #6)

Dell OptiPlex 760 Small Form Factor - Intel Pentium 4 Dual Core E2200, 2.2GHz, 1MB L2 Cache, 800MHz FSB; 2GB (2x1GB), Non-ECC, 667MHz DDR2 (2 DIMMs); 24X CDRW/DVD Combo Drive, EIDE; 80GB SATA II 3.0Gb/s, 8MB Cache,7200 rpm hard drive; Windows Vista Business license with Windows XP PRO SP3 OS installed; (1) 10/100/1000 RJ45 Ethernet port; (1) serial ports; (1) E-SATA Port, (8) USB 2.0 ports; Dell P190S 19" Monitor; Integrated Intel GMA 4500 Video; Internal Chassis Speakers; USB keyboard/mouse; surge suppression strip; 3 year limited warranty.

HIGH PERFORMANCE VIDEO CLIENT PC (Config #7)

Dell Precision T3500 Minitower - Intel Xeon W3520 (Nehalem) Quad Core , 2.66GHz, 8MB L3 Cache, 4.8GT/s, 525W, 3GB (3 x 1GB) 1066MHz, DDR3 Non-ECC SDRAM Memory (3 DIMMs), 16x DVD+/-RW, 80GB SATA II 3.0Gb/s, 8MB Cache,7200 rpm hard drive, Windows Vista Business license with Windows XP PRO SP3 OS installed, Intel PRO 1000 RJ45 Ethernet port, (1) Dell P190S 19" Monitor, Dual NVIDIA NVS 295, PCI-e x16 256MB Dual Display Port Graphics Cards and Cables (Quad Monitor capable), (1) serial ports, (1) parallel port, (8) USB 2.0 ports, (1) E-SATA Port, Internal Chassis Speakers, USB keyboard/mouse, surge suppression strip, 3 year limited warranty.

Supported IP Cameras

The Lenel Network Video Recorder (LNVR) support a wide range of commercial off the shelf IP cameras. The LNVR also supports traditional analog cameras through the use of IP encoders. Lenel supports cameras from the following manufacturers. Please refer to the list of supported IP cameras for more information.

+ Lenel
+ Axis
+ ArecontVision
+ Baxall
+ Bosch XPro and Dinion
+ IQinVision

+ Mobotix
+ Lumenera
+ Panasonic
+ Sony
+ Toshiba

Video Format	Maximum Concurrent Viewing Frame Rate	
	DV Client PC Intel Pentium 4 Dual Core E2200	High Performance DV Client Intel Xeon W3520
CIF (320x240) MPEG4	120 FPS 4 CH @ 30 FPS	4,000 FPS 200 CH @ 20 FPS
CIF (320x240) MJPEG	120 FPS 4 CH @ 30 FPS	1,200 FPS 40 CH @ 30 FPS
4CIF (640x480) MPEG4	75 FPS 2 CH @ 30 FPS; 1 CH @ 15 FPS	1,600 FPS 80 CH @ 20 FPS
4CIF (704x480) MJPEG	75 FPS 2 CH @ 30 FPS; 1 CH @ 15 FPS	420 FPS 14 CH @ 30 FPS

Analog Video Capture Cards

Hi-Res 30FPS Video Board (DVB-444)

MPEG4 Compression; 30/25fps for each of the four channels
• Maximum of four (4) 4-channel video boards per server
• Recording resolution: CIF, 4CIF, D1
• Variable frame rate for each camera (NTSC/PAL) 1/1, 2/2, 7.5/6.2, 15/12.5 and 30/25 FPS

Hi-Res Video Board (DVB-408)

MPEG4 Compression; 60/50fps multiplexed across an 8-channel board
• Max 7.5/6.2 fps per CH @ CIF
• Max 3.75/3.1 fps per CH @ 2CIF
• Max two (2) 8-channel video boards per server.
• Variable frame rate for each camera (NTSC/PAL): .9/.7, 1.8/1.5, 3.75/3.1 and 7.5/6.2 FPS

Hi-Res H.264 30FPS Video Board (DVB-16H264)

• H.264 Compression
• Maximum of two 16-channel video boards per DVC-EX2 3U server
• Maximum of one 16-channel video board per DVC-2U 2U server
• Recording resolution: CIF, 4CIF, D1
• Variable frame rate for each camera up to 30/25 FPS (NTSC/PAL)
1 Video Board Chassis
• 16 channel video and audio 25FPS PAL /30FPS NTSC encode at CIF resolution
• 16 channel video and audio 25FPS PAL /30FPS NTSC encode at 2CIF resolution
• 8 channel video and audio 25FPS PAL /30FPS NTSC encode at 4CIF resolution
• 16 channel video and audio encode 13FPS PAL /15fps NTSC at 4CIF resolution
2 Video Board Chassis
• 32 channel video and audio 25FPS PAL /30FPS NTSC encode at CIF resolution
• 32 channel video and audio 25FPS PAL /30FPS NTSC encode at 2CIF resolution
• 16 channel video and audio 25FPS PAL /30FPS NTSC encode at 4CIF resolution
• 32 channel video and audio encode 13FPS PAL /15fps NTSC at 4CIF resolution

Lenel Video Chassis Benchmarks

Frame Rate	Cameras Per Network Video Recorder [1]					
	1U Chassis with X3230 QC (IP Cameras Only)[2]	2U Chassis with E1400 DC (16 Analog) CPU Utilization	2U Chassis with E1400 DC (16 Analog and 8 IP) CPU Utilization	3U Chassis with E8400 DC (IP Cameras Only)[2]	3U Chassis with E8400 DC (16 IP and 16 Analog) CPU Utilization	3U Chassis with E8400 DC (32 IP and 32 Analog) CPU Utilization
10 FPS	64 Cameras	2%	23%	40 Cameras	27%	32%
15 FPS	41 Cameras	2%	32%	34 Cameras	37%	51%
20 FPS	30 Cameras	2%	39%	27 Cameras	47%	69%
25 FPS	24 Cameras	3%	46%	21 Cameras	56%	Not Supported
30 FPS	22 Cameras	3%	54%	15 Cameras	66%	Not Supported

Frame Rate	Cameras Per Network Video Recorder[1]				
	3U Chassis with Q9650 QC (IP Cameras Only)[2]	3U Chassis with Q9650 QC (16 IP and 16 Analog) CPU Utilization	3U Chassis with Q9650 QC (32 IP and 32 Analog) CPU Utilization	3U16 Chassis with Dual E5520 QC (64 IP Cameras) CPU Utilization	3U16 Chassis with Dual E5520 QC (32 IP and 32 Analog) CPU Utilization
10 FPS	64 cameras	14%	46%	17%	9%
15 FPS	57 cameras	20%	48%	23%	13%
20 FPS	43 cameras	25%	50%	28%	17%
25 FPS	35 cameras	31%	57%	35%	20%
30 FPS	28 cameras	36%	67%	39%	23%

[1] Calculated using an AXIS 243Q under the following parameters: 704X480, 50% compression, MPEG4 with Motion using OnGuard 6.1.222 HF1 with LNVR 6.223

[2] Maximum Number of Cameras at 70% CPU Utilization