



EasyNVR

A&E Specifications

Architect & Engineering specifications for the EasyNVR video recording and management servers.

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1. Summary

This A&E specification document outlines and describes the architecture of the App-Techs EasyNVR video recording and management servers. This document outlines and describes parts, part codes, and the different configuration options for each server model, as well as optional applications that can be installed onto and utilized by the EasyNVR servers.

2. How to Use This Document

This document is not a design guide. It assumes that you have identified or selected a particular EasyNVR configuration, and that an associated EasyNVR part code has already been generated. Then you can step through the sections of this document to assemble (copy and paste) the corresponding detailed A&E specification.

3. EasyNVR Part Code Scheme

There are 6 elements to every EasyNVR part code ...

#1	#2	#3	#4	#5	#6
System / Chassis Style	Operating System Configuration	Live Drive Configuration	Archive Drive Configuration	Milestone XProtect® Software Version	Options

You generate an A&E specification by pulling the appropriate detailed specification corresponding to each of the 6 elements of the part code. The sum of these specifications will provide the total specification for your chosen EasyNVR.

The following table outlines all the options within each of the 6 part code elements ...

System / Chassis Style	Operating System Configuration (*1)	Live Drive Configuration (*2,* 3)	Archive Drive Configuration (*4)	Milestone XProtect® SW	Options
Lite LX = Lite	Windows 7 WSX = Solid State drive	Standard Drives S1J = 1 Drive, JBOD S2J = 2 Drives, JBOD S3J = 3 Drives, JBOD S4J = 4 Drives, JBOD S1M = 1 Pair, Mirrored S2M = 2 Pairs, Mirrored S3M = 3 Pairs, Mirrored S4M = 4 Pairs, Mirrored S1T = 4 Drives, RAID 10	JBOD 01J = 1TB, 1 drive 02J = 2TB, 1 drive 03J = 3TB, 1 drive 04J = 4TB, 2 drives 06J = 6TB, 2 drives 08J = 8TB, 4 drives 09J = 9TB, 3 drives 12J = 12TB, 4 drives 15J = 15TB, 5 drives 18J = 18TB, 6 drives 21J = 21TB, 7 drives 24J = 24TB, 8 drives 27J = 27TB, 9 drives	G = Go S = Essentials X = Express P = Professional E = Enterprise T = Expert C = Corporate N = No Milestone SW Installed	HUM = Health Utility Monitor MXPB = XProtect Bridge FHBA = Fiber Host Adapter VIRW = Virtual Environment Windows 7 NIC = Additional NIC CAIS= Isonas SW Installed CAZK = ZK SW Installed HYB = 16 Channel Encoder Board VGA – Additional VGA Graphics Adapter (Not Available on Performance models) 2WTY = 2 Yr. Warranty 3WTY = 3 Yr. Warranty
Economy ES = Tower ER = Rack-mount 3U E2 = Rack-mount 2U	WSM = Solid State drives, Mirrored WSO = No dedicated OS Drive (For Lite Models Only)				
Standard SS = Tower / Rack 4U SP = Tower / Rack 4U with Redundant PS S2 = Rack 2U with Redundant PS	Windows Server 2008 SSX = Solid State drive SSM = Solid State drives, Mirrored	Fast Drives F1J = 1 Drive, JBOD F2J = 2 Drives, JBOD F3J = 3 Drives, JBOD F4J = 4 Drives, JBOD F1M = 1 Pair, Mirrored F2M = 2 Pairs, Mirrored F3M = 3 Pairs, Mirrored F4M = 4 Pairs, Mirrored F1T = 4 Drives, RAID 10 F2T = 8 Drives, RAID 10 NLD = No Live Drives	RAID 5 (usable storage) 035 = 3TB, 4 drives 045 = 4TB, 3 drives 065 = 6TB, 3 drives 085 = 8TB, 5 drives 095 = 9TB, 4 drives 125 = 12TB, 5 drives 155 = 15TB, 6 drives 185 = 18TB, 7 drives 215 = 21TB, 8 drives RAID 6 (usable storage) 036 = 3TB, 3 drives 046 = 4TB, 4 drives 066 = 6TB, 4 drives 096 = 9TB, 5 drives 126 = 12TB, 6 drives 156 = 15TB, 7 drives 186 = 18TB, 8 drives NIS = No internal storage		
Standard Plus XS = Tower / Rack 4U XP = Tower / Rack 4U with Redundant PS X2 = Rack 2U with Redundant PS					
Performance PS = Tower / Rack 4U PP = Tower / Rack 4U with Redundant PS P2 = Rack 2U with Redundant PS					
Management Servers MS = Rack 1U MP = Rack 1U with Redundant PS					
					For Milestone XProtect Software Licenses add Milestone Part code + quantity Refer to Milestone Price Sheet for part numbers

Hard Drive Specifications

*1 - SSD 2.5" 80 GB, 270MB/s Sustained Sequential Read; 90MB/s Sustained Sequential Write

*2 - SATA, 3.5" 500 GB, 7,200 RPM

*3 - SAS, 3.5", 300 GB, 15,000 RPM

*4 - SATA, 3.5" 1TB, 7,200 RPM: SATA, 3.5", 2TB, 7,200 RPM: SATA 3.5" 3TB, 7,200 RPM

EasyNVR Universal Option & Specifications (Common to all Systems)

4. EasyNVR Universal Options and Specifications (Common to all Systems)

The EasyNVR is a comprehensive line of servers that offers many degrees of customization. You may choose a different chassis, operating system, live drive configuration, "live drive" configuration, archive drive configuration and your specific Milestone XProtect software version.

You can add an additional NIC (network interface card), a Fiber HBA (host bus adapter), HUM[®] (health utility monitor), or MXPBridge[®] (an integration module). In addition to all this customization, the EasyNVRs are built and optimized for Milestone XProtect systems and include many other notable features, such as:

Design, Manufacture, Support and Warranty ...

- The EasyNVR shall be engineered and assembled in USA.
- The EasyNVR shall undergo a factory stress-test and 24-hour burn-in procedure to insure reliability upon delivery.
- The EasyNVR shall be maintained a database (such as an ERP system). The database shall include, minimally, system serial number, assembly date, assembly and quality control personnel records, components, component serial numbers where applicable, sources of components, license keys, and warranty dates. This data shall be available to customers through an Internet customer portal.
- The EasyNVR shall be manufactured using commercial off-the-shelf (COTS) components, such that maintenance and repair operations can be readily performed by any qualified technician with access to enterprise-class parts.
- The EasyNVR shall be available with warranty options for up to three years from the purchase date.
- The EasyNVR shall have manufacturer's support for up to three years from the purchase date.

System Hardware ...

- The EasyNVR shall contain one or more CPUs manufactured by world-class processor manufacturer Intel[®].
- The EasyNVR power supplies shall be rated for high-efficiency / "green" power conversion.
- The EasyNVR disk (or solid state) drives shall be rated as "enterprise-class" hardware.
- The EasyNVR recording servers shall have sufficient disk controller ports to fully populate all disk drive bays.

System Software and Configuration ...

- The system BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers.
- The EasyNVR shall have a Microsoft Windows operating system configured for minimal overhead to accommodate maximum performance of video data processing and management.
- The EasyNVR shall utilize the original equipment manufacturers' device drivers, and be configured to facilitate maximum performance and flexibility of all system hardware.
- The EasyNVR operating system "services" shall be optimized for minimal overhead and maximum performance.
- The EasyNVR network ports shall be optimized for gigabit networks to maximize video data I/O performance.

Application Software ...

- The EasyNVR shall be installed with the most recently released Milestone XProtect Software. Milestone Corporate recording servers are only pre-loaded (not pre-configured) with the software but they contain all necessary Microsoft subsystems for all Milestone products, such that no files need be downloaded or installed from the Internet or CDs.
- The EasyNVR shall include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The systems shall also include all manuals (PDFs) relative to the included Milestone software, and the manuals shall be organized on the Windows "Desktop" or otherwise within "My Documents" of the default user.

Remote Support ...

- The EasyNVR operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

EasyNVR Lite Options and Specifications

5. EasyNVR Lite Video Recording Server

The recording server shall come optimized for maximum video processing efficiency and preloaded with your specified Milestone XProtect Software, making the installation of a Milestone XProtect system fast and reliable.

The hard drives shall be partitioned and formatted for maximum video processing efficiency.

5.1. Chassis and General Specifications

Part Code	Description
LX	The recording server chassis comes as a small-form-factor tower/cube (14.40" x 8.9" x 4") equipped with (2) drive bays, LED indicators for system power and hard drive activity, a minimum of 4GBs of DDR3 memory, (2) front USB ports, (1) VGA, (1) HDMI port, (1) 3.5mm audio jack and shall utilize an Intel® Celeron 2.5GHz, Dual-Core Processor.
	The recording server shall come equipped with (1) on-board gigabit network interface port. This shall supply the necessary connection to a switch for camera feed recording. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall come equipped with a power supply shall be rated for 150w and be equipped with (1) 80mm cooling fan. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.

5.2. Operating System

The recording server shall run a contemporary Microsoft Windows operating system. The Microsoft Windows 7 operating system of the EasyNVR Lite shall be configured for minimal overhead to accommodate maximum performance of video data processing and management.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
WSX	The recording server's operating system drive configuration shall be equipped with an Intel® solid state SATA drive for the operating system drive that shall consist of the Microsoft Windows 7 Professional operating system installed on (1) 80GB, 3Gb/s, 2.5" solid state SATA drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
WSO	The recording server's operating system drive configuration shall consist of no dedicated operating system drive. The Windows 7 Professional operating system shall be installed on an enterprise class hard drive that will share drive space with the video recording and archive storage.

5.3. Live Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
SIJ	The recording server's live drive configuration shall consist of (1) 500GB, 7,200rpm, 3.5" enterprise class SATA drive
NLD	The recording server's live drive configuration shall indicate that the server shall not have a dedicated live drive. In this configuration, the video streams shall be stored directly on the archive drive(s).

5.4. Archive Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
01J	The recording server's archive drive configuration shall consist of (1)TB of storage space on (1) 1TB, 7,200rpm, 3.5" enterprise class SATA drive.

02J	The recording server's archive drive configuration shall consist of (2)TB of storage space on (1) 2TB, 7,200rpm, 3.5" enterprise class SATA drive.
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5.5. Milestone XProtect Software

The A&E specifications for Milestone XProtect VMS Software can be found on the Milestone web site. Refer to the "Links" section, below of this document for links for the Milestone A&E Specification Documents.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Version	Description
G	Milestone XProtect Go	Milestone XProtect Go Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
S	Milestone XProtect Essentials	Milestone XProtect Essentials Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
X	Milestone XProtect Express	Milestone XProtect Express Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
P	Milestone XProtect Professional	Milestone XProtect Professional Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
E	Milestone XProtect Enterprise	Milestone XProtect Enterprise Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
T	Milestone XProtect Expert	Milestone XProtect Expert Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
C	Milestone XProtect Corporate Recording Server	Milestone XProtect Corporate Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
N	No Milestone Software Installed	This option code indicates that the EasyNVR server shall come without the Milestone XProtect software.

5.6. Options

Choose a part code from the table below for additional options. More than one option can be chosen ...

Part Code	Description
HUM	The server shall come with the HUM® utility installed. HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from days to months to even a year so trends can be observed. When utilizing HUM®, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect

	System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
HYB	16 Channel Encoder Board with (16) analog video and (16) audio inputs.
2WTY	The server shall have a 2-year warranty that shall cover all components of the server.
3WTY	The server shall have a 3-year warranty that shall cover all components of the server.

EasyNVR Economy Options and Specifications

6. EasyNVR Economy Recording Server

The recording server shall come optimized for maximum video processing efficiency and preinstalled with your specified Milestone XProtect Software, making the installation of a Milestone XProtect system fast and reliable. The servers shall install and configure the original equipment manufacturers' device drivers to facilitate maximum performance and flexibility of all system hardware. The hard drives shall be partitioned and formatted for maximum video processing efficiency. The operating system will also be optimized by deleting needless Microsoft services. The BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers. All network ports shall be optimized for gigabit networks to maximize video data I/O.

6.1. Chassis and General Specifications

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
ES	The recording server shall come as a tower chassis (19.3" x 7.5" x 16.7") equipped with (1) CD/DVD + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) 3.5mm audio jack, (1) microphone jack, LED indicators for system power and hard drive activity, 6GB of DDR3, RAM, and an Intel® Core i3, Dual-Core, 3.30GHz processor.
	The recording server shall be equipped with (1) gigabit network port. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server tower shall be equipped with a power supply rated for 400 watts and (1) 120mm rear cooling fan. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
ER	The recording server shall come as a rack mount 3U chassis (19" x 19" x 5.3") equipped with (1) CD/DVD + (9) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 6GB of DDR3 RAM, and an Intel® Core i3, Dual-Core, 3.30GHz processor.
	The recording server shall be equipped with (1) gigabit network port. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server 3U rack mount chassis shall come equipped with a power supply rated for 500 watts and (3) 80mm cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
E2	The recording server shall come as a rack mount 2U chassis (23.5" x 16" x 3.5") equipped with (1) CD/DVD + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 6GB of DDR3 RAM, and an Intel® Core i3, Dual-Core, 3.30GHz processor.
	The recording server shall be equipped with (1) gigabit network port. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server 2U rack mount chassis shall come equipped with a power supply rated for 500 watts and (1) 80mm cooling fan. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.

6.2. Operating System Drive Configurations

The recording server shall run a contemporary Microsoft Windows operating system. The Microsoft Windows operating system of the recording server shall be configured for minimal overhead to accommodate maximum performance of video data processing and management. The recording server's operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
WSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed on (1) 80GB, 3Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
WSM	The recording server's operating system configuration shall consist of the Microsoft Windows 7 Professional operating system being installed (2) 80GB, 3Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.

6.3. Live Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD with 7,200 rpm enterprise class drives
S1J	The recording server's live drive configuration shall consist of (1) 500 GB, 7,200rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
S2J	The recording server's live drive configuration shall consist of (2) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S3J	The recording server's live drive configuration shall consist of (3) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S4J	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
	Mirrored Operating System with 7,200 rpm enterprise class drives
S1M	The recording server's live drive configuration shall consist of (1) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6GB/s throughput.
S2M	The recording server's live drive configuration shall consist of (2) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S3M	The recording server's live drive configuration shall consist of (3) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S4M	The recording server's live drive configuration shall consist of (4) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	RAID 10 with 7,200 rpm enterprise class drives
S1T	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	JBOD with 15,000 rpm enterprise class drives
F1J	The recording server's live drive configuration shall consist of (1) 300 GB, 15,000rpm, 3.5" enterprise class SATA drive in a JBOD configuration. This drive configuration shall include a SAS controller.
F2J	The recording server's live drive configuration shall consist of (2) 300 GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F3J	The recording server's live drive configuration shall consist of (3) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
	Mirrored with 15,000 rpm enterprise class drives
F1M	The recording server's live drive configuration shall consist of (1) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA

	drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F2M	The recording server's live drive configuration shall consist of (2) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F3M	The recording server's live drive configuration shall consist of (3) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F4M	The recording server's live drive configuration shall consist of (4) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
	RAID 10 with 15,000 rpm enterprise class drives
F1T	The recording server's live drive configuration consists of (4) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
F2T	The recording server's live drive configuration consists of (8) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
	No Live Drive
NLD	The recording server will have no dedicated live drives and all video will reside on the archive drive(s).

6.4. Archive Drive

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD
01J	The recording server's archive drive configuration shall consist of (1) TB of storage on (1) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
02J	The recording server's archive drive configuration shall consist of (2) TB of storage on (1) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
03J	The recording server's archive drive configuration shall consist of (3) TB of storage on (3) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
04J	The recording server's archive drive configuration shall consist of (4) TB of storage on (2) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
06J	The recording server's archive drive configuration shall consist of (6) TB of storage on (2) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
08J	The recording server's archive drive configuration shall consist of (8) TB of storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
09J	The recording server's archive drive configuration shall consist of (9) TB of storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
12J	The recording server's archive drive configuration shall consist of (12) TB of storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
15J	The recording server's archive drive configuration shall consist of (15) TB of storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
18J	The recording server's archive drive configuration shall consist of (18) TB of storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
21J	The recording server's archive drive configuration shall consist of (21) TB of storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
24J	The recording server's archive drive configuration shall consist of (24) TB of storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
27J	The recording server's archive drive configuration shall consist of (27) TB of storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
	RAID 5
035	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (4) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
045	The recording server's archive drive configuration shall consist of (4) TB of usage storage on (3) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
065	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
085	The recording server's archive drive configuration shall consist of (8) TB of usage storage on (5) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
095	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
125	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.

155	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
185	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
215	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
RAID 6	
036	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
046	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
066	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
096	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
126	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
156	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
186	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
No Internal Storage	
NIS	This recording server shall have no dedicated archive drives and video will be stored to an external storage device(s).

6.5. Milestone XProtect Software

The A&E specifications for Milestone XProtect VMS Software can be found on the Milestone web site. Refer to the "Links" section, below of this document for links for the Milestone A&E Specification Documents.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Version	Description
G	Milestone XProtect Go	Milestone XProtect Go Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
S	Milestone XProtect Essentials	Milestone XProtect Essentials Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
X	Milestone XProtect Express	Milestone XProtect Express Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
P	Milestone XProtect Professional	Milestone XProtect Professional Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
E	Milestone XProtect Enterprise	Milestone XProtect Enterprise Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
T	Milestone XProtect Expert	Milestone XProtect Expert Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals

		(PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
C	Milestone XProtect Corporate Recording Server	Milestone XProtect Corporate Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
N	No Milestone Software Installed	This option code indicates that the EasyNVR server shall come without the Milestone XProtect software.

6.6. Options

Choose a part code from the table below for additional options. More than one option can be chosen ...

Part Code	Description
HUM	The server shall come with the HUM® utility installed. HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from days to months to even a year so trends can be observed. When utilizing HUM®, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
MXPB	The server will have MXPBridge (an integration module for Milestone XProtect) pre-installed on the server and the base license for MXPBridge will be activated. A shortcut to the MXPBridge manual will be located on the desktop.
FHBA	The server shall come equipped with a fiber host adapter that shall allow for high speed connection to external storage devices.
VIRW	The server shall come with a pre-configured virtual environment (a virtual machine built into a recording server). This will allow for installing and using third party software while keeping it isolated from the recording server. This virtual environment shall be a Microsoft Windows 7 Professional environment configured accordingly with resources from the parent server for optimal performance.
NIC	The server shall come equipped with an additional gigabit network interface card for EasyNVR video recording servers.
CAIS	The server shall come with the Isonas Crystal Matrix card access management software installed on it making it ready for integration with the Isonas card readers.
CAZK	The server shall come with the ZKAccess card access management software installed on it making it ready for integration with the ZKAccess card readers.
HYB	16 Channel Encoder Board with (16) analog video and (16) audio inputs.
VGA	The graphics adapter shall come as PCI-Express card with a minimum of 128MB of RAM and (1) VGA and (1) DVI port.
2WTY	The server shall have a 2-year warranty that shall cover all components of the server.
3WTY	The server shall have a 3-year warranty that shall cover all components of the server.

EasyNVR Standard Options and Specifications

7. EasyNVR Standard Recording Server

The recording server shall come optimized for maximum video processing efficiency and preloaded with your specified Milestone XProtect Software, making the installation of a Milestone XProtect system fast and reliable. The servers shall install and configure the original equipment manufacturers' device drivers to facilitate maximum performance and flexibility of all system hardware. The hard drives shall be partitioned and formatted for maximum video processing efficiency. The operating system will also be optimized by deleting needless Microsoft services. The BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers. All network ports shall be optimized for gigabit networks to maximize video data I/O.

7.1. Chassis and General Specifications

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
SS	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7"). The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with (1) CD/DVD drive + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack (1) microphone jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i5, Quad-Core, 2.8GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server shall be equipped with a power supply rated for 665 watts and (4) 5000 rpm hot-swap PWM cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
SP	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7") The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with a redundant power supply, (1) CD/DVD drive + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i5, Quad-Core, 2.8GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 4U rack mountable tower chassis shall come equipped with a redundant power supply rated for 1200 watts and (5) 5000 rpm hot-swap PWM cooling fans (3 front, 2 (hot-swap) rear). These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
S2	The recording server shall come as a rack mount 2U chassis (25.5" x 17.2" x 3.5") The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with (1) CD/DVD drive + (2) internal + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i5, Quad-Core, 2.8GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 2U rack mount chassis shall come equipped with a redundant power supply rated for 700 watts and (3) 80mm cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.

7.2. Operating System

The recording server shall run a contemporary Microsoft Windows operating system. The Microsoft Windows operating system of the EasyNVR Standard shall be configured for minimal overhead to accommodate maximum performance of video data processing and management. The EasyNVR Standard operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
WSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed on (1) 80 GB, 3Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
WSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed (2) 80 GB, 3 Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008 R2 operating system being installed on (1) 80 GB, 3 Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008 R2 operating system being installed (2) 80 GB, 3Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.

7.3. Live Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD with 7,200 rpm enterprise class drives
S1J	The recording server's live drive configuration shall consist of (1) 500 GB, 7,200rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
S2J	The recording server's live drive configuration shall consist of (2) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S3J	The recording server's live drive configuration shall consist of (3) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S4J	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
	Mirrored Operating System with 7,200 rpm enterprise class drives
S1M	The recording server's live drive configuration shall consist of (1) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6GB/s throughput.
S2M	The recording server's live drive configuration shall consist of (2) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S3M	The recording server's live drive configuration shall consist of (3) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S4M	The recording server's live drive configuration shall consist of (4) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	RAID 10 with 7,200 rpm enterprise class drives
S1T	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	JBOD with 15,000 rpm enterprise class drives
F1J	The recording server's live drive configuration shall consist of (1) 300 GB, 15,000rpm, 3.5" enterprise class SATA drive in a

	JBOD configuration. This drive configuration shall include a SAS controller.
F2J	The recording server's live drive configuration shall consist of (2) 300 GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F3J	The recording server's live drive configuration shall consist of (3) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F4J	The recording server's live drive configuration shall consist of (4) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
	Mirrored with 15,000 rpm enterprise class drives
F1M	The recording server's live drive configuration shall consist of (1) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F2M	The recording server's live drive configuration shall consist of (2) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F3M	The recording server's live drive configuration shall consist of (3) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F4M	The recording server's live drive configuration shall consist of (4) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
	RAID 10 with 15,000 rpm enterprise class drives
F1T	The recording server's live drive configuration consists of (4) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
F2T	The recording server's live drive configuration consists of (8) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
	No Live Drive
NLD	The recording server will have no dedicated live drives and all video will reside on the archive drive(s).

7.4. Archive Drive Configuration

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD
01J	The recording server's archive drive configuration shall consist of (1) TB of storage on (1) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
02J	The recording server's archive drive configuration shall consist of (2) TB of storage on (1) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
03J	The recording server's archive drive configuration shall consist of (3) TB of storage on (3) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
04J	The recording server's archive drive configuration shall consist of (4) TB of storage on (2) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
06J	The recording server's archive drive configuration shall consist of (6) TB of storage on (2) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
08J	The recording server's archive drive configuration shall consist of (8) TB of storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
09J	The recording server's archive drive configuration shall consist of (9) TB of storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
12J	The recording server's archive drive configuration shall consist of (12) TB of storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
15J	The recording server's archive drive configuration shall consist of (15) TB of storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
18J	The recording server's archive drive configuration shall consist of (18) TB of storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
21J	The recording server's archive drive configuration shall consist of (21) TB of storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
24J	The recording server's archive drive configuration shall consist of (24) TB of storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
27J	The recording server's archive drive configuration shall consist of (27) TB of storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
	RAID 5
035	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (4) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
045	The recording server's archive drive configuration shall consist of (4) TB of usage storage on (3) 2 TB, 7,200 rpm, 3.5"

	enterprise class SATA drive in a RAID 5 configuration.
065	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
085	The recording server's archive drive configuration shall consist of (8) TB of usage storage on (5) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
095	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
125	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
155	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
185	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
215	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
	RAID 6
036	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
046	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
066	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
096	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
126	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
156	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
186	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
216	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
	No Internal Storage
NIS	This recording server shall have no dedicated archive drives and video will be stored to an external storage device(s).

7.5. Milestone XProtect Software

The A&E specifications for Milestone XProtect VMS Software can be found on the Milestone web site. Refer to the "Links" section, below of this document for links for the Milestone A&E Specification Documents.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Version	Description
G	Milestone XProtect Go	Milestone XProtect Go Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
S	Milestone XProtect Essentials	Milestone XProtect Essentials Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
X	Milestone XProtect Express	Milestone XProtect Express Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
P	Milestone XProtect Professional	Milestone XProtect Professional Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the

		Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
T	Milestone XProtect Expert	Milestone XProtect Expert Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
E	Milestone XProtect Enterprise	Milestone XProtect Enterprise Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
C	Milestone XProtect Corporate Recording Server	Milestone XProtect Corporate Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
N	No Milestone Software Installed	This option code indicates that the EasyNVR server shall come without the Milestone XProtect software.

7.6. Options

Choose a part code from the table below for additional options. More than one option can be chosen ...

Part Code	Description
HUM	The server shall come with the HUM® utility installed. HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from days to months to even a year so trends can be observed. When utilizing HUM®, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
MXPB	The server will have MXPBridge (an integration module for Milestone XProtect) pre-installed on the server and the base license for MXPBridge will be activated. A shortcut to the MXPBridge manual will be located on the desktop.
FHBA	The server shall come equipped with a fiber host adapter that shall allow for high speed connection to external storage devices.
VIRW	The server shall come with a pre-configured virtual environment (a virtual machine built into a recording server). This will allow for installing and using third party software while keeping it isolated from the recording server. This virtual environment shall be a Microsoft Windows 7 Professional environment configured accordingly with resources from the parent server for optimal performance.
NIC	The server shall come equipped with an additional gigabit network interface card for EasyNVR video recording servers.
CAIS	The server shall come with the Isonas Crystal Matrix card access management software installed on it making it ready for integration with the Isonas card readers.
CAZK	The server shall come with the ZKAccess card access management software installed on it making it ready for integration with the ZKAccess card readers.
HYB	16 Channel Encoder Board with (16) analog video and (16) audio inputs.
VGA	The graphics adapter shall come as PCI-Express card with a minimum of 128MB of RAM and (1) VGA and (1) DVI port.
2WTY	The server shall have a 2-year warranty that shall cover all components of the server.
3WTY	The server shall have a 3-year warranty that shall cover all components of the server.

EasyNVR Standard Plus Options and Specifications

8. EasyNVR Standard Plus Recording Server

The recording server shall come optimized for maximum video processing efficiency and preloaded with your specified Milestone XProtect Software, making the installation of a Milestone XProtect system fast and reliable. The servers shall install and configure the original equipment manufacturers' device drivers to facilitate maximum performance and flexibility of all system hardware. The hard drives shall be partitioned and formatted for maximum video processing efficiency. The operating system will also be optimized by deleting needless Microsoft services. The BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers. All network ports shall be optimized for gigabit networks to maximize video data I/O.

8.1. Chassis and General Specifications

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
XS	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7"). The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with (1) CD/DVD drive + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack (1) microphone jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i7, Quad-Core, 3.4GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server shall be equipped with a power supply rated for 665 watts and (4) 5000 rpm hot-swap PWM cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
XP	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7") The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with a redundant power supply, (1) CD/DVD drive + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i7, Quad-Core, 3.4GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 4U rack mountable tower chassis shall come equipped with a redundant power supply rated for 1200 watts and (5) 5000 rpm hot-swap PWM cooling fans (3 front, 2 (hot-swap) rear). These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
X2	The recording server shall come as a rack mount 2U chassis (25.5" x 17.2" x 3.5") The chassis can be rack mountable with the included rack-mount adapter rails. The system will be equipped with (1) CD/DVD drive + (2) internal + (8) drive bays for all OS, Live, and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) HDMI port, (1) 3.5mm audio jack, LED indicators for system power and hard drive activity, 8GB of DDR3 RAM, and an Intel® Core i7, Quad-Core, 3.4GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O.
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 2U rack mount chassis shall come equipped with a redundant power supply rated for 700 watts and (3) 80mm cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.

8.2. Operating System

The recording server shall run a contemporary Microsoft Windows operating system. The Microsoft Windows operating system of the EasyNVR Standard shall be configured for minimal overhead to accommodate maximum performance of video data processing and management. The EasyNVR Standard operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
WSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed on (1) 80 GB, 3Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
WSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed (2) 80 GB, 3 Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008 R2 operating system being installed on (1) 80 GB, 3 Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008 R2 operating system being installed (2) 80 GB, 3Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.

8.3. Live Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD with 7,200 rpm enterprise class drives
S1J	The recording server's live drive configuration shall consist of (1) 500 GB, 7,200rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
S2J	The recording server's live drive configuration shall consist of (2) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S3J	The recording server's live drive configuration shall consist of (3) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S4J	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
	Mirrored Operating System with 7,200 rpm enterprise class drives
S1M	The recording server's live drive configuration shall consist of (1) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6GB/s throughput.
S2M	The recording server's live drive configuration shall consist of (2) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S3M	The recording server's live drive configuration shall consist of (3) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S4M	The recording server's live drive configuration shall consist of (4) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	RAID 10 with 7,200 rpm enterprise class drives
S1T	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	JBOD with 15,000 rpm enterprise class drives
F1J	The recording server's live drive configuration shall consist of (1) 300 GB, 15,000rpm, 3.5" enterprise class SATA drive in a

	JBOD configuration. This drive configuration shall include a SAS controller.
F2J	The recording server's live drive configuration shall consist of (2) 300 GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F3J	The recording server's live drive configuration shall consist of (3) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F4J	The recording server's live drive configuration shall consist of (4) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
	Mirrored with 15,000 rpm enterprise class drives
F1M	The recording server's live drive configuration shall consist of (1) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F2M	The recording server's live drive configuration shall consist of (2) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F3M	The recording server's live drive configuration shall consist of (3) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F4M	The recording server's live drive configuration shall consist of (4) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
	RAID 10 with 15,000 rpm enterprise class drives
F1T	The recording server's live drive configuration consists of (4) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
F2T	The recording server's live drive configuration consists of (8) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
	No Live Drive
NLD	The recording server will have no dedicated live drives and all video will reside on the archive drive(s).

8.4. Archive Drive Configuration

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD
01J	The recording server's archive drive configuration shall consist of (1) TB of storage on (1) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
02J	The recording server's archive drive configuration shall consist of (2) TB of storage on (1) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
03J	The recording server's archive drive configuration shall consist of (3) TB of storage on (3) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
04J	The recording server's archive drive configuration shall consist of (4) TB of storage on (2) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
06J	The recording server's archive drive configuration shall consist of (6) TB of storage on (2) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
08J	The recording server's archive drive configuration shall consist of (8) TB of storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
09J	The recording server's archive drive configuration shall consist of (9) TB of storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
12J	The recording server's archive drive configuration shall consist of (12) TB of storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
15J	The recording server's archive drive configuration shall consist of (15) TB of storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
18J	The recording server's archive drive configuration shall consist of (18) TB of storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
21J	The recording server's archive drive configuration shall consist of (21) TB of storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
24J	The recording server's archive drive configuration shall consist of (24) TB of storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
27J	The recording server's archive drive configuration shall consist of (27) TB of storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
	RAID 5
035	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (4) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
045	The recording server's archive drive configuration shall consist of (4) TB of usage storage on (3) 2 TB, 7,200 rpm, 3.5"

	enterprise class SATA drive in a RAID 5 configuration.
065	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
085	The recording server's archive drive configuration shall consist of (8) TB of usage storage on (5) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
095	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
125	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
155	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
185	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
215	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
	RAID 6
036	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
046	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
066	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
096	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
126	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
156	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
186	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
216	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
	No Internal Storage
NIS	This recording server shall have no dedicated archive drives and video will be stored to an external storage device(s).

8.5. Milestone XProtect Software

The A&E specifications for Milestone XProtect VMS Software can be found on the Milestone web site. Refer to the "Links" section, below of this document for links for the Milestone A&E Specification Documents.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Version	Description
G	Milestone XProtect Go	Milestone XProtect Go Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
S	Milestone XProtect Essentials	Milestone XProtect Essentials Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
X	Milestone XProtect Express	Milestone XProtect Express Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
P	Milestone XProtect Professional	Milestone XProtect Professional Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the

		Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
E	Milestone XProtect Enterprise	Milestone XProtect Enterprise Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
T	Milestone XProtect Expert	Milestone XProtect Expert Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
C	Milestone XProtect Corporate Recording Server	Milestone XProtect Corporate Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
N	No Milestone Software Installed	This option code indicates that the EasyNVR server shall come without the Milestone XProtect software.

8.6. Options

Choose a part code from the table below for additional options. More than one option can be chosen ...

Part Code	Description
HUM	The server shall come with the HUM® utility installed. HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from days to months to even a year so trends can be observed. When utilizing HUM®, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
MXPB	The server will have MXPBridge (an integration module for Milestone XProtect) pre-installed on the server and the base license for MXPBridge will be activated. A shortcut to the MXPBridge manual will be located on the desktop.
FHBA	The server shall come equipped with a fiber host adapter that shall allow for high speed connection to external storage devices.
VIRW	The server shall come with a pre-configured virtual environment (a virtual machine built into a recording server). This will allow for installing and using third party software while keeping it isolated from the recording server. This virtual environment shall be a Microsoft Windows 7 Professional environment configured accordingly with resources from the parent server for optimal performance.
NIC	The server shall come equipped with an additional gigabit network interface card for EasyNVR video recording servers.
CAIS	The server shall come with the Isonas Crystal Matrix card access management software installed on it making it ready for integration with the Isonas card readers.
CAZK	The server shall come with the ZKAccess card access management software installed on it making it ready for integration with the ZKAccess card readers.
HYB	16 Channel Encoder Board with (16) analog video and (16) audio inputs.
VGA	The graphics adapter shall come as PCI-Express card with a minimum of 128MB of RAM and (1) VGA and (1) DVI port.
2WTY	The server shall have a 2-year warranty that shall cover all components of the server.
3WTY	The server shall have a 3-year warranty that shall cover all components of the server.

EasyNVR Performance Options and Specifications

9. EasyNVR Performance Recording Server

The recording server shall come optimized for maximum video processing efficiency and preloaded with your specified Milestone XProtect Software, making the installation of a Milestone XProtect system fast and reliable. The servers shall install and configure the original equipment manufacturers' device drivers to facilitate maximum performance and flexibility of all system hardware. The hard drives shall be partitioned and formatted for maximum video processing efficiency. The operating system will also be optimized by deleting needless Microsoft services. The BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers. All network ports shall be optimized for gigabit networks to maximize video data I/O.

9.1. Chassis and General Specifications

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
PS	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7") The chassis can be rack mountable with optional rack-mount adapter rails. The system will be equipped with (1) CD/DVD + (2) internal OS drive bays + (8) hot-swap drive bays for all Live and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) audio out, (1) microphone jack, LED indicators for system power and hard drive activity, 12GB of DDR3 RAM, and an Intel® Xeon, Quad-Core, 2.8GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 4U rack-mountable tower shall be equipped with a power supply rated for 500 watts and (4) 5000 rpm hot-swap PWM cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
PP	The recording server shall come as a tower/ 4U rack mount chassis (25.5" x 17.8" x 7"). The chassis will include rack-mount adapter rails. The system will be equipped with a redundant power supply, (1) CD/DVD + (2) internal OS drive bays+ (8) hot-swap drive bays for Live and Archive hard drives, (2) USB 2.0, (1) VGA port, LED indicators for system power and hard drive activity, 12GB of DDR3 RAM, and an Intel® Xeon, Quad-Core, 2.26GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 4U rack mountable tower chassis shall come equipped with a redundant power supply rated for 1200 watts and (5) 5000 rpm hot-swap PWM cooling fans (3 front, 2 (hot-swap) rear). These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.
P2	The recording server shall come as a rack mount 2U chassis (25.5" x 17.2" x 3.5"). The chassis will include rack-mount adapter rails. The system be equipped with a redundant power supply, (1) CD/DVD + (2) internal OS drive bays+ (8) drive bays for all Live and Archive hard drives, (2) USB 2.0, (1) VGA port, (1) DB9M, 12GB of DDR3 RAM, and an Intel® Xeon, Quad-Core, 2.26GHz processor.
	The recording server shall be equipped with (2) gigabit network ports. This shall provide fast data throughput for camera recordings and playback viewing. The network port(s) shall be optimized for gigabit networks to maximize video data I/O
	The recording server shall include power and SATA ports for all available drive bays, to allow for field installation of additional disk drives (without requiring additional hardware).
	The recording server's 2U rack mount chassis shall come equipped with a power redundant power supply 700 watts and (3) 80mm cooling fans. These shall provide adequate power and cooling to the server to keep it running at a safe operating temperature.

9.2. Operating System Configurations

The recording server shall run a contemporary Microsoft Windows operating system. The Microsoft Windows operating system of the EasyNVR Performance shall be configured for minimal overhead to accommodate maximum performance of video data processing and management. The EasyNVR Performance operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
WSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed on (1) 80GB, 3Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
WSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows 7 Professional operating system being installed (2) 80GB, 3Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSX	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008R2 operating system being installed on (1) 80GB, 3Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSM	The recording server's operating system drive configuration shall consist of the Microsoft Windows Server 2008R2 operating system being installed (2) 80GB, 3Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.

9.3. Live Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD with 7,200 rpm enterprise class drives
S1J	The recording server's live drive configuration shall consist of (1) 500 GB, 7,200rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
S2J	The recording server's live drive configuration shall consist of (2) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S3J	The recording server's live drive configuration shall consist of (3) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
S4J	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
	Mirrored Operating System with 7,200 rpm enterprise class drives
S1M	The recording server's live drive configuration shall consist of (1) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6GB/s throughput.
S2M	The recording server's live drive configuration shall consist of (2) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S3M	The recording server's live drive configuration shall consist of (3) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
S4M	The recording server's live drive configuration shall consist of (4) pair of 500 GB, 7,200rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	RAID 10 with 7,200 rpm enterprise class drives
S1T	The recording server's live drive configuration shall consist of (4) 500 GB, 7,200 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall require a RAID controller. The controller shall be an 8-port, 6 GB/s throughput.
	JBOD with 15,000 rpm enterprise class drives
F1J	The recording server's live drive configuration shall consist of (1) 300 GB, 15,000rpm, 3.5" enterprise class SATA drive in a

	JBOD configuration. This drive configuration shall include a SAS controller.
F2J	The recording server's live drive configuration shall consist of (2) 300 GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F3J	The recording server's live drive configuration shall consist of (3) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
F4J	The recording server's live drive configuration shall consist of (4) 300GB, 15,000rpm, 3.5" enterprise class SATA drives in a JBOD configuration. This drive configuration shall include a SAS controller.
	Mirrored with 15,000 rpm enterprise class drives
F1M	The recording server's live drive configuration shall consist of (1) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F2M	The recording server's live drive configuration shall consist of (2) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F3M	The recording server's live drive configuration shall consist of (3) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
F4M	The recording server's live drive configuration shall consist of (4) pair of 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a mirrored configuration. This drive configuration shall include a SAS controller.
	RAID 10 with 15,000 rpm enterprise class drives
F1T	The recording server's live drive configuration consists of (4) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
F2T	The recording server's live drive configuration consists of (8) 300 GB, 15,000 rpm, 3.5" enterprise class SATA drives in a RAID 10 configuration. This drive configuration shall include a SAS controller.
	No Live Drive
NLD	The recording server will have no dedicated live drives and all video will reside on the archive drive(s).

9.4. Archive Drive Configurations

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
	JBOD
01J	The recording server's archive drive configuration shall consist of (1) TB of storage on (1) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
02J	The recording server's archive drive configuration shall consist of (2) TB of storage on (1) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
03J	The recording server's archive drive configuration shall consist of (3) TB of storage on (3) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
04J	The recording server's archive drive configuration shall consist of (4) TB of storage on (2) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
06J	The recording server's archive drive configuration shall consist of (6) TB of storage on (2) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
08J	The recording server's archive drive configuration shall consist of (8) TB of storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
09J	The recording server's archive drive configuration shall consist of (9) TB of storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
12J	The recording server's archive drive configuration shall consist of (12) TB of storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
15J	The recording server's archive drive configuration shall consist of (15) TB of storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drives in a JBOD configuration.
18J	The recording server's archive drive configuration shall consist of (18) TB of storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
21J	The recording server's archive drive configuration shall consist of (21) TB of storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
24J	The recording server's archive drive configuration shall consist of (24) TB of storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
27J	The recording server's archive drive configuration shall consist of (27) TB of storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a JBOD configuration.
	RAID 5
035	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (4) 1 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
045	The recording server's archive drive configuration shall consist of (4) TB of usage storage on (3) 2 TB, 7,200 rpm, 3.5"

	enterprise class SATA drive in a RAID 5 configuration.
065	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
085	The recording server's archive drive configuration shall consist of (8) TB of usage storage on (5) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
095	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
125	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
155	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
185	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
215	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 5 configuration.
	RAID 6
036	The recording server's archive drive configuration shall consist of (3) TB of usage storage on (3) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
046	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 2 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
066	The recording server's archive drive configuration shall consist of (6) TB of usage storage on (4) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
096	The recording server's archive drive configuration shall consist of (9) TB of usage storage on (5) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
126	The recording server's archive drive configuration shall consist of (12) TB of usage storage on (6) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
156	The recording server's archive drive configuration shall consist of (15) TB of usage storage on (7) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
186	The recording server's archive drive configuration shall consist of (18) TB of usage storage on (8) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
216	The recording server's archive drive configuration shall consist of (21) TB of usage storage on (9) 3 TB, 7,200 rpm, 3.5" enterprise class SATA drive in a RAID 6 configuration.
	No Internal Storage
NIS	This recording server shall have no dedicated archive drives and video will be stored to an external storage device(s).

9.5. Milestone XProtect Software

The A&E specifications for Milestone XProtect VMS Software can be found on the Milestone web site. Refer to the "Links" section, below, of this document for links for the Milestone A&E Specification Documents.

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Version	Description
G	Milestone XProtect Go	Milestone XProtect Go Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
S	Milestone XProtect Essentials	Milestone XProtect Essentials Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
X	Milestone XProtect Express	Milestone XProtect Express Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
P	Milestone XProtect Professional	Milestone XProtect Professional Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the

		Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
E	Milestone XProtect Enterprise	Milestone XProtect Enterprise Software shall be pre-installed on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
T	Milestone XProtect Expert	Milestone XProtect Expert Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
C	Milestone XProtect Corporate Recording Server	Milestone XProtect Corporate Software shall be pre-loaded on the server. The system shall contain all necessary Microsoft subsystems installation of all Milestone products, such that no files need to be downloaded or installed from the Internet or CD's. The system shall also include Desktop shortcuts for the Milestone Smart Client and XProtect Management application. The system shall include all manuals (PDF's) relative to the included Milestone software, and the manuals shall be organized on the Desktop.
N	No Milestone Software Installed	This option code indicates that the EasyNVR server shall come without the Milestone XProtect software.

9.6. Options

Choose a part code from the table below for additional options. More than one option can be chosen ...

Part Code	Description
HUM	The server shall come with the HUM® utility installed. HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from days to months to even a year so trends can be observed. When utilizing HUM®, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
MXPB	The server will have MXPBridge (an integration module for Milestone XProtect) pre-installed on the server and the base license for MXPBridge will be activated. A shortcut to the MXPBridge manual will be located on the desktop.
FHBA	The server shall come equipped with a fiber host adapter that shall allow for high speed connection to external storage devices.
VIRW	The server shall come with a pre-configured virtual environment (a virtual machine built into a recording server). This will allow for installing and using third party software while keeping it isolated from the recording server. This virtual environment shall be a Microsoft Windows 7 Professional environment configured accordingly with resources from the parent server for optimal performance.
NIC	The server shall come equipped with an additional gigabit network interface card for EasyNVR video recording servers.
CAIS	The server shall come with the Isonas Crystal Matrix card access management software installed on it making it ready for integration with the Isonas card readers.
CAZK	The server shall come with the ZKAccess card access management software installed on it making it ready for integration with the ZKAccess card readers.
HYB	16 Channel Encoder Board with (16) analog video and (16) audio inputs.
2WTY	The server shall have a 2-year warranty that shall cover all components of the server.
3WTY	The server shall have a 3-year warranty that shall cover all components of the server.

EasyNVR Management Options and Specifications

10. EasyNVR Management Server Models

The management server shall run a contemporary Microsoft Windows operating system. As of the publication date of this document, operating systems include: Windows Server 2008 or Windows 7 Professional. The specified Microsoft Windows operating system of the EasyNVR shall be configured for minimal overhead to accommodate maximum performance of video data processing and management. The EasyNVR operating system shall be pre-configured for remote access and ease of remote connectivity. The remote access subsystem can be easily disabled on demand or per individual security policies.

The management server's BIOS shall be configured for automatic recovery after power failures, maximum system performance (without over-clocking the CPU), and for maximum power savings supporting "green" data centers. The EasyNVR shall contain CPU(s) manufactured by World Class processor manufacturer Intel.

10.1. Chassis and General Specification

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
MS	The management server chassis shall come as a 1U rack mount chassis (21.95" x 16.8" x 1.7") equipped with (1) CD/DVD + (4) hot-swap bays, (2) USB 2.0, (1) serial port, (1) on-board VGA port, LED indicators for system power and hard drive activity, 4 GB of DDR3 RAM, and an Intel® Xeon, Quad-Core, 2.8GHz processor.
	The management server shall be equipped with (1) gigabit network port.
	The management server 1U rack-mountable chassis shall be equipped with a power supply rated for 330w and (3) 40mm cooling fans. These features shall provide adequate power and cooling to the system.
MP	The management server chassis shall come as a 1U rack mount chassis (19.98" x 17.2" x 1.7") equipped with (1) CD/DVD + (8) hot-swap bays, (2) USB 2.0, (1) serial port, (1) on-board VGA port, LED indicators for system power and hard drive activity, 6GB of DDR3 RAM, and an Intel® Xeon, Quad-Core, 2.8GHz processor.
	The management server shall be equipped with (1) gigabit network port.
	The management server 1U rack-mountable chassis shall be equipped with a redundant power supply rated for 400w and (4) 40mm cooling fans. These features shall provide adequate power and cooling to the system.

10.2. OS Drive Configuration

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
SSX	The management server drive configuration shall consist of the Microsoft Windows Server 2008R2 operating system being installed on (1) 80 GB, 3 Gb/s, 2.5" solid state drive. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.
SSM	The management server drive configuration shall consist of the Microsoft Windows Server 2008R2 operating system being installed (2) 80 GB, 3 Gb/s, 2.5" solid state drives in a mirrored configuration. The use of solid state technology provided low energy consumption, low heat generation, and ensures performance, reliability, and longevity as these drives have no moving part making them less susceptible to stress and failure.

10.3. Options

Choose the option (part code segment) that represents the appropriate configuration ...

Part Code	Description
HUM	HUM® is a utility that logs vital parameters associated with your server hardware such as CPU core temperature(s), network memory utilization, CPU utilization, system uptime, disk temperature(s), disk I/O, disk storage, disk run time, disk errors, disk queue length and disk space consumed per camera as well as Network devices, and Windows & Milestone XProtect sub-systems. The HUM® interface is web-based and information is presented in a graphical format with selectable time scales from

	days to months to even a year so trends can be observed. When utilizing HUM©, the administrator(s) shall have all the tools necessary to manage, monitor and troubleshoot the Milestone XProtect System. The data provided by the HUM® utility can be integrated into the Milestone XProtect Smart Client. This utility shall also give the administrator/user the ability to view current system hardware states and be proactive with system maintenance as well as possible hardware failures before they occur so as to limit or reduce the occurrence of system downtime.
MXPB	The server will have MXPBridge (an integration module for Milestone XProtect) pre-installed on the server and the base license for MXPBridge will be activated. A shortcut to the MXPBridge manual will be located on the desktop.
VIRES	Virtual environment (a virtual machine built into a management server). This will allow for installing and using third party software while keeping it isolated from the recording server. This virtual environment shall be a Microsoft Windows Server 2008R2 environment configured accordingly with resources from the parent server for optimal performance
NIC	Additional gigabit network interface card for EasyNVR video recording servers
CAIS	The server shall come with the Isonas Crystal Matrix card access management software installed on it making it ready for integration with the Isonas card readers.
CAZK	The server shall come with the ZKAccess card access management software installed on it making it ready for integration with the ZKAccess card readers.
2WTY	2-year warranty for the EasyNVR video recording and management servers. This warranty shall cover all components of the server.
3WTY	3-year warranty for the EasyNVR video recording and management servers. This warranty shall cover all components of the server.

11. Links

11.1. Milestone Systems XProtect A&E Spec. Documents

XProtect Enterprise

http://www.milestonesys.com/Sharepoint/XProtectEnterprise/8_0/AE_Specs/Milestone%20XProtect%20Enterprise%208%20AE%20Specification_EN_US.pdf

XProtect Corporate

http://www.milestonesys.com/Sharepoint/XProtectCorporate/5_0/AE_Specs/Milestone_XProtect_Corporate5_0AESpecification_ENG.pdf

XProtect Professional

http://www.milestonesys.com/Sharepoint/XProtectProfessional/8/A_E%20Specs/Milestone%20XProtect%20Professional%208%20AE%20Specification_EN_US.pdf

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