

Longwatch Surveillance System

Longwatch Video Engine



Longwatch[™]
enabling security, safety, productivity

The Longwatch Video Engine (LVE) is a software application that turns any Windows XP computer into a powerful, distributed video recorder for industrial video control. The Longwatch Video Engine enables video to be taken conveniently from high resolution cameras and placed easily in the HMI for a variety of surveillance and control purposes.

The LVE continually gathers and stores high-resolution video from up to twelve (12) cameras. If more than 12 cameras are needed on a single Longwatch Video Engine, additional “instances” of the LVE can be run in the same computer, or distributed over the network in other computers. Longwatch’s flexible licensing system allows cameras to be placed on whatever LVEs the user desires.

Video can be archived locally at the LVE for up to 30 days, depending on the storage available.

“Smart Editing” of the video is performed when an event occurs. The “event clip” video contains video before the event as well as after the event; the length of time is pre-configured by the user. Event clips are automatically transmitted to the Longwatch Video Control Center for further processing (such as alarm notification, display on the HMI or forwarding to a cell phone.)

Typically, external detectors such as motion detectors or door/limit switches are used for event detection. The LVE software has built-in anomaly detection so that a clip is generated if something enters a static frame. Events can also be triggered manually by the operator at the HMI.

The LVE is connected to the Longwatch Video Control center using almost any available network. Thus, the LVE is capable of both local and remote placement.



Capabilities

- Live video transmission
- Local DVR storage of high quality video
- Audio Recording
- Guard Tour Video Updates
- Automated Video Event Clip generation, including pre- and post-event video
- Ability to communicate over existing PLC networks, serial connections, or TCP/IP networks
- Communications Method Indifferent:
 - Radio, Telephone, Satellite, Fiber-Optic, Frame Relay, T1, Cellular, etc.
 - Scalable from 2400 baud to Gigabit Ethernet
- Supports up to 12 Axis IP cameras or any analog cameras with Axis Video Server(s)
- Centrally or Remotely Managed
- Advanced Security Capability
 - Windows Security Integration
 - RIJNDAEL-AES 128 bit encryption
 - IPSEC Capability
- Optional Card Access Control
- Multiple instances of the LVE can be installed on the same computer

Applications

- Manual Batch Step Verification and Validation
- Facility Security and Safety Surveillance
- Remote Site Monitoring and Management
- Virtual Site Inspection and Maintenance Planning
- Video as a Process Variable
- Video Supplement of Process Alarming

The Longwatch Surveillance System is comprised of two components: a software component called the Longwatch Video Control Center (VCC) and one of three types of video collection engines:

- **Longwatch Video Engine (LVE)**
Software Only Engine (up to 12 cameras)
- **Micro Video Engine (Micro)**
Industrial, Compact, Low-power DVR (up to 2 cameras)
- **Remote Video Engine (RVE)**
Industrial DVR packaging supporting up to 6 cameras

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SYSTEM SPECIFICATIONS

VIDEO

Camera Support: Axis IP cameras, Analog cameras using Axis video servers

IP Camera Acquisition Speed: 30 Frames/Second, 150 total fps

The LVE stores to DVR at the above maximum rates. It will also transmit Live and Event video to the VCC, depending on available bandwidth, up to the above rates, but normally at a rate appropriate to the communications network.

EVENT DETECTION

Inputs: When paired with the Adam-6050 I/O module, the Micro can utilize 12 optically isolated input channels.

- Input Range, ± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, 0-20 mA, 4-20 mA
- Fault Protection, overvoltage up to ± 35 V
- Optical Isolation, 5000V RMS

Outputs: When paired with the Adam-6050 I/O module, the Micro can utilize 6 optically isolated output channels.

- Externally powered
- Voltage between terminals, +10 to 30VDC
- Output current, 200mA (Max per Channel)
- Optical Isolation, 5000V RMS
- Turn-on time (off to on), 7ms (Typ)
- Turn-off time (on to off), 3ms (Typ)

Notification: Event Notification is performed via the Longwatch VCC

Access Control Components (Optional):

HID-Compatible Proximity Card Readers (up to 4 per remote) and an Essex Electronics Keypad (for user PIN entry)

PROTOCOLS SUPPORTED

Allen-Bradley DF1, Modbus/RTU, Modbus/ASCII, Bristol Babcock BSAP, TCP, UDP, Phone Dialer, SIO* (Modbus/TCP, Modbus/RTU, Modbus/ASCII, Allen-Bradley DH+ SLC, Allen-Bradley Ethernet SLC, Phone Dialer, TCP and UDP are supported at the Longwatch VCC.)

* SIO is the native Longwatch Serial Protocol for use on dedicated serial networks.

PHYSICAL COMMUNICATIONS

Leased Telephone lines, Licensed or Unlicensed Radio, Cellular, Satellite, Frame Relay, T1, Fiber-Optic cable, Cellular Networks, etc.

SYSTEM REQUIREMENTS

4 Cameras	12 Cameras	Multiple LVEs
Pentium 4 512K L2 Cache 1GB RAM 100MB Ethernet* Standard HDD	Pentium 4 1MB L2 Cache 2GB RAM 100MB Ethernet* High Speed HDD	Dual Core 2MB L2 Cache 3 GB RAM 1 GB Ethernet RAID HDD
DVD \pm R/ \pm RW and/or USB 2.0 (video transfer)		

SYSTEM REQUIREMENTS

Day@Resolution	4 Cameras	12 Cameras	24 Cameras
5 days@640x480	100 GB	300 GB	600 GB
5 days@1280x1024	400 GB	1.2 TB	2.4 TB
10 days@640x480	200 GB	600 GB	1.2 TB
10 days@1280x1024	800 GB	2.4 TB	4.8 TB
30 days@640x480	600 GB	1.8 TB	3.6 TB
30 days@1280x1024	2.4 TB	7.2 TB	Recommended

OPERATING SYSTEM REQUIREMENTS

Microsoft Windows XP Professional, SP2 or
Microsoft Windows Server 2003, SP2

About Longwatch

Longwatch was founded by a team of industry veterans with the goal of providing video over existing SCADA communication networks. The result was the development of the Longwatch Video Surveillance System. Advanced technology incorporated in the system allows SCADA system operators the ability to utilize video to monitor and verify alarms at remote sites utilizing the existing communications infrastructure.

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