American Dynamics
A Tyco International Company

VideoEdge NVR

Network Video Recorder

Features That Make a Difference:

- Essential part of the *victor* unified video management system
- Supports H.264, MPEG-4 and MJPEG compression and dual-streaming cameras
- Generates and analyzes video motion scene meta-data for forensic *victor* unified client Smart Searches
- Supports dual streaming cameras enabling multiple video streams to be used for live, record, alarm bump and meta-data collection optimization
- Embedded Linux® kernel provides the highest level of security and performance in tandem with low total cost of ownership
- Internal storage up to 10 TB or expandable with external storage up to 104 TB per NVR
- Live and recorded streaming video
- Synchronizes live and recorded audio and video streams, supports G.726, G.711, and AAC audio compressions
- Email notification of health alerts directly from NVR to assigned personnel
- Integrates with a variety of applications including Software House C·CURE 9000 access control systems
- Open platform supports many third party[1] devices and hardware
- Remote management from standard web browsers or client software
- Scalable architecture supports on-demand upgrades for additional video and storage devices
- Chain-of-custody feature provides indisputable video evidence

VideoEdge is one of the highest performing NVRs on the market. Combined with victor video management systems, lets you view and manage all of your VideoEdge NVRs, as well as Intellex DVRs, all from one intuitive interface. This video solution supports from a single NVR to a large scale multi-site organization. The NVR supports mulit-channel audio and video for a robust enterprise video management solution. VideoEdge delivers streaming video which enables users to instantly view the video, jump ahead, or skip to new time/dates, without lengthy downloads that clip-based competitor solutions employ.

The pre-configured server solutions utilize an embedded Linux 2.6 kernel operating system, for high security IT solutions without the tedium of frequent patch updates other OS based solutions face.

VideoEdge supports H.264, MPEG-4, and MJPEG video CODEC. H.264 takes video compression technology to a new level. It is capable of providing good video quality at substantially lower bit rates than previous standards (MPEG-4 or MJPEG). H.264 greatly reduces transmission bandwidth and storage needs.

The VideoEdge NVR software has been performance tested[2] to support up to 400 Mbps of recorded video throughput to either internal or external storage. VideoEdge is available as a 2U rack mounted option, rated at 400 Mbps, or a tower version, rated at 200 Mbps. It supports a variety of camera manufacturers, and is designed to achieve the highest level of performance to support a mix of megapixel, and standard definition IP cameras.[1]. Using encoders[1], you can also utilize analog cameras.

The open system architecture of VideoEdge NVR allows you to start with any number of cameras and scale up as needed by uploading a newer camera license. There is no need to register each individual camera as required by many other similar products on the market today.

VideoEdge NVR is based on Intel's Westmere CPU for high system performance. The NVR uses Tier 2 near-line SAS hard disk drives specifically designed for high throughput performance critical server applications. Unlike commonly used low cost SATA drives, Tier 2 near-line SAS drives are intended for 24 x 7 reliability and an extended lifetime.

(1) Refer to www.americandynamics.net for the latest list of supported devices, hardware, codec's, browsers, and other related information including recommended system requirements for hardware and storage. All proprietary hardware components (e.g. RAID controllers) or devices (e.g. new IP cameras) require special drivers or unique camera handlers. Therefore review information related to the latest released version.

(2) VideoEdge NVR bundled server has been performance tested with up to 128 cameras on a single NVR. The camera license is based on a per video channel input; 8-channel encoders, will each occupy 8-channel slots. Therefore, review information related to the latest released version. The configuration of the NVR, number of cameras, codec, frame rate and recording modes will impact its performance and functionality.

Features

Innovative Technologies

VideoEdge NVR has a true server-client architecture designed to manage video very efficiently and achieve superior performance. The server was designed specifically to handle the demanding processing requirements of H.264 and today's high definition megapixel camera customer deployments. The processor, memory, and disk space overhead typically associated with commercially available operating systems do not apply to VideoEdge NVR.

VideoEdge systems provide unique built-in virtualization so that any number of NVRs and cameras from one or more sites looks like one logical NVR. This enables you to better manage a large number of devices and/or locations.

As the number of cameras increase at a facility, resolution and frame rate performance can become a challenge. VideoEdge NVR features many unique algorithms to achieve maximum read and write performance. Innovative techniques enable VideoEdge NVR to achieve the highest possible performance while supporting more devices and storage for the lowest total cost-of-ownership.

victor unified video management system

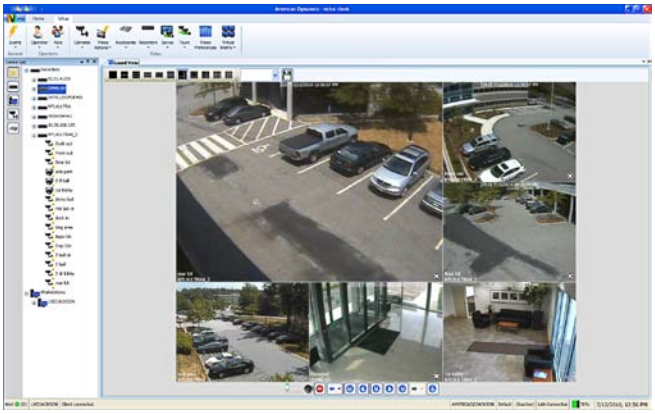
With the powerful *victor* unified client, you get the unique ability to view, manage, and control recorded video from Intellex DVRs, VideoEdge NVRs, as well as live video from analog and IP cameras. Display video simultaneously with common feature set, no matter what the codec (H.264, ACC, MJPEG, MPEG-4); even mixing and matching technologies. All in one location without toggling between client applications!

victor is an easy to use video management system leveraging VideoEdge's high performance video streaming, audio, meta-data motion scene capture, and more. For additional information please see the victor datasheet.

Scalability

VideoEdge NVRs are completely scalable to provide maximum return on investment (ROI). As your security needs grow you can add additional NVR camera licences[3] simply.

When storage requirements increase due to setting changes, such as with the addition of megapixel cameras or an increased number of cameras, the NVR is designed to dynamically support additional storage[4].



victor and VideoEdge NVR 4 are a powerful easy to use video security system for a variety of applications.

Motion Meta-Data

VideoEdge NVR analyzes video streams and generates motion meta-data to be used in connection with *victor* to enable forensic ad hoc motion-based smart searches. Operators are able to get results in a matter of seconds for their investigations of recorded video objects, individuals or vehicles, or other anomalous activities.

Dual Streaming Cameras

VideoEdge NVR camera settings enable you to maximize your storage and system performance. Dual stream cameras can be set up for a mix of live, recorded, alarm bump, and meta-data collection uses. For example, one stream can be set for a low frame per second and image resolution for low storage requirements. A second stream can be set for a high frame rate and resolution for live and alarm bump recording. Additionally, the VideoEdge NVR buffers both video streams making it possible to switch the recorded video for up to five minutes before and after the event; thus capturing critical incident in high quality video while minimizing your storage needs.

Enterprise Reliability

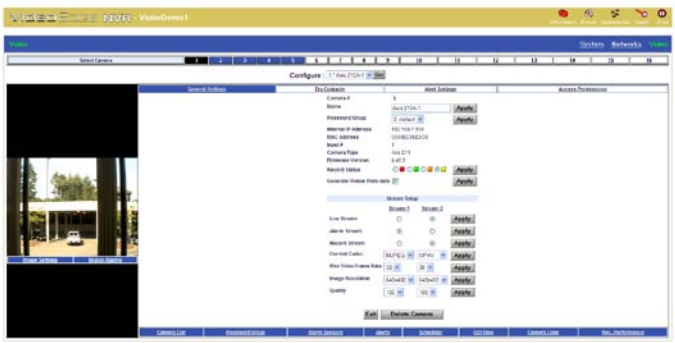
VideoEdge is designed for 24 x 7 usage with extremely high throughput of video with near lossless video recording. Health alerts can be setup to display in the victor Event Viewer and be sent as Email to inform a variety of users if there are system issues. The dual power supply when used with an uninterrupted power supply (UPS) ensure your recorder does not stop in the event of a power failure.

Security

Since VideoEdge NVR includes an embedded Linux operating system and functions as a web-based appliance, it provides the highest level of security. There is no keyboard access at the server, no file-level access, and no back-door access. The NVR operates in read-only mode and utilizes a minimum number of ports for access and communication. An administrator audit trail is also automatically generated to track system changes that affect the functionality of the NVR. VideoEdge NVR is extremely secure because it is a

(3) VideoEdge NVR software license is based on a per video channel input; therefore, any multi-channel device, such as 8-channel encoders, will each require slots. The configuration of the NVR, number of cameras, codec, frame rate and recording modes will impact its performance and functionality.
(4) Direct Attached (Fibre) and Network (iSCSI) RAID Storage.

read-only device and restricts any file-level access. This secure environment prevents the installation of viruses, Trojan horses, spyware and other malicious programs. Other solutions running on standard operating system (e.g. Windows) would generally rely on the latest updates from third party security software to detect these types of programs after they have already been installed.



VideoEdge support dual streaming cameras for used for live, record, alarm bump and meta-data scene collection.

Open Solution

With a well-documented software development kit (SDK) and 100% API-driven NVR, VideoEdge easily integrates with other business-critical systems such as Software House C·CURE 9000 access control systems and other third party applications[5]. The built-in web server enables you to configure the NVR from most client PCs and use Internet Explorer to manage the system.

Chain-of-Custody

There are many software tools available today that enable users to manipulate nearly any type of digital file. These tools can be used to enhance the original file to provide a sharper image but can also be used to manipulate the original file. To ensure that no video has been altered, VideoEdge NVR provides clear chain-of-custody.

Distributed Architecture

VideoEdge NVR provides automatic bridging of multiple subnets to enable you to set up separate networks (physical switches or logical VLANs) for clients, cameras, and/or IP SAN storage to achieve the highest levels of performance and security. VideoEdge NVR also supports large capacity Direct Attached (Fibre) and Network (iSCSI) RAID Storage devices[5].

VideoEdge NVR distributed architecture addresses the diverse requirements of large and small customer applications. Each NVR is completely self-contained and uses its own resources to manage video and storage devices.

Customers can manage remote sites by connecting to VideoEdge NVRs via an IP address or domain name using a web browser or with the American Dynamics *victor* client, part of the VideoEdge Management Suite. Since physical access to the NVR is not required, firmware can also be updated remotely[6].

High-Availability and Failover

By design, VideoEdge NVR includes both high-availability and failover. Each NVR can be configured to support up to two levels of backup storage for each designated storage section. In the event that the primary storage fails, VideoEdge NVR automatically switches to backup storage to ensure that recording continues. Additional hard drives and/or logical RAID volumes need to be available to configure backup storage.

You have the option to designate one or more VideoEdge NVRs as the failover NVR which can be configured to suit the needs of the site: 1-to-1 or many-to-1 (N+1). If any of the monitored VideoEdge NVRs go offline, the failover NVR will immediately begin to manage and support all of its video devices to provide continued recording and access to those devices.

VideoEdge NVRs are designed to easily backup/restore the entire configuration database and can be rebuilt from scratch (via new unformatted hard drive) and completely recovered (NVR database for cameras, network, security, storage, users, etc.) for full operation within minutes. This is ideal in disaster recovery situations, saving a “snapshot” of the NVR after making any setting changes in case the system has to be reverted back to a previous configuration. It is also useful when deploying a larger number of VideoEdge NVRs to multiple sites.

Lowest Cost-of-Ownership

As the number of physical NVR requirements increases (e.g. multiple buildings and sites), you are protected from the hidden incremental costs associated with NVR server licenses, operating system, security software, and IT management resources for each and every server. Therefore, when the scope of any security project increases, VideoEdge NVR provides a dramatic cost savings for you and your customers.

(5) Refer to www.americandynamics.net for the latest list of supported devices, hardware, codec's, browsers, and other related information including recommended system requirements for hardware and storage. All proprietary hardware components (e.g. RAID controllers) or devices (e.g. new IP cameras) require special drivers or unique camera handlers.
(6) A fast and reliable network connection is required between the client and VideoEdge NVR to ensure a successful firmware re-flash.

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Specifications for VideoEdge Models

VideoEdge									
SERVER CONFIGURATION	OPERATING SYSTEM	CPU TYPE	RAM (GB)	OPTICAL	BOOT HDD	NETWORK CARD	CONTROLLER	VIDEO STORAGE	POWER SUPPLY
Dell® R710 Server 2U IT rack mount with USB keyboard	Linux 2.6 Kernel	Quad-Core Intel® Xeon 5620 CPU	4 GB DDR2	16x DVD	1 TB Nearline SAS HDD	4x Gigabit Ethernet NICs	PERC/6i hard drive controller	Tier 2 Nearline SAS HDDs (1, 3, 5 or 10 TB)	Redundant
Dell T310 Server Tower with USB keyboard	Linux 2.6 Kernel	Quad-Core Intel Xeon 3460 CPU	4 GB DDR2	16x DVD	1 TB Nearline SAS HDD	4x Gigabit Ethernet NICs	PERC/6i hard drive controller	Tier 2 Nearline SAS HDDs (1, 3 or 6 TB)	Single

Ordering Information for VideoEdge NVR (bundled server solution)

Model Numbers	Description
ADVE40R01D710	VideoEdge NVR 4.0 R710 with 16 camera licenses and 1 TB of video storage
ADVE40R03D710	VideoEdge NVR 4.0 R710 with 16 camera licenses and 3 TB of video storage
ADVE40R05D710	VideoEdge NVR 4.0 R710 with 16 camera licenses and 5 TB of video storage
ADVE40R10D710	VideoEdge NVR 4.0 R710 with 16 camera licenses and 10 TB of video storage
ADVE40T01D310	VideoEdge NVR 4.0 T310 with 4 camera licenses and 1 TB of video storage
ADVE40T03D310	VideoEdge NVR 4.0 T310 with 4 camera licenses and 3 TB of video storage
ADVE40T06D310	VideoEdge NVR 4.0 T310 with 4 camera licenses and 6 TB of video storage

Model Numbers	Description
ADVE40S01	1 additional VideoEdge NVR camera license

NOTES:

- VideoEdge NVR bundled servers are preconfigured with software and internal storage but require registration online for licensing.
- Three-year warranty on hardware; one-year on software.
- Additional camera licenses (ADVE40S01) are sold separately.
- Extended storage solutions for iSCSI RAID Storage (ADIRS2Txxxx & ADIRS2Rxxxx), Fibre HBA Card, Fibre RAID Storage (ADFRS2Rxxx), and Expansion Unit (ADERS2Rxxxx) are all sold separately.
- Host bus adapter connectivity (ADFRSHBAE1) to extended Direct Attached 4 GB Fibre RAID Storage is sold separately.
- 3rd Gigabit NIC connectivity (LAN3) to extended iSCSI RAID Storage is included on these servers.
- Network design and configuration of storage will impact the overall performance and functionality.
- Optical drive is used for booting and installing VideoEdge NVR software onto an internal and dedicated hard drive.
- Graphics card, monitor, and keyboard are used for NVR installation process and to display status information (e.g. NVR IP address).
- Video storage depends on VideoEdge NVR model and external storage setup.

Related Products

victor

IP cameras


Fibre + iSCSI Storage Solutions

Software House C•CURE 9000

Approvals

RoHS 2002/95/EC

www.americandynamics.net