

## VideoXpert™ v 3.13

### Scalable Video Management and Surveillance Software

#### Product Features

- Enterprise-level video security management system that combines multiple threat assessment systems into a single, easy-to-use interface for assessing, investigating, and responding to incidents
- Intuitive controls are easy for the new or casual user to learn, while more powerful, customizable keyboard shortcuts allow the security expert to rapidly and effortlessly navigate through video and other information
- Supports MJPEG, MPEG-4, H.264, and H.265
- Built-in enterprise monitor wall functionality allows any video to be pushed to any monitor connected to the system, either manually or with a powerful and easy-to-use Rules Engine scripting tool
- Supports up to a 64-camera layout (8 x 8) per tab
- Independent scalability and redundancy of each system component ensures VideoXpert Enterprise™ is always the right size, and always fault tolerant
- Delivers the fastest video call-ups and smoothest video experience in the market today
- Patented Pelco technology offers administrators the ability to reduce the frame rate of previously recorded video after a specified number of days, resulting in increased retention time and storage cost savings (Patent No.: US10134145 B2)
- Offers beautiful and fast dewarping navigation with Pelco's Optera® and Evo cameras
- Support for Pelco Camera Link tracking tracks PTZs to panoramic Optera views in an instant
- Provides seamless transition from VideoXpert Professional™
- Provides migration paths for Endura® and Digital Sentry® systems
- Supports environments that use anti-virus and firewall software
- Imports users and roles from existing LDAP servers to reduce administrative overhead, and enables single sign-on (SSO)
- Microsoft® Windows®-based for easy setup and maintenance
- Assess VMS and camera health using SNMP (VxSNMP™ is available as a free, separate download)
- Includes the Event Monitor Service™ feature, capable of polling for alarms from devices and performing specified actions when an alarm state change occurs (VideoXpert Event Monitor Service is available as a free, separate download)
- Ability to connect video streams to third-party clients, with customizable RTSP endpoints that allow a client application connection to a VideoXpert System™ stream via the VxConnect™ service (VxConnect™ is available as a separate download)
- VxPortal™ allows web-based viewing and exporting of video without installing any software



- VxToolbox™ provides a simple interface for all configuration, from adding a new camera to the system, to managing licenses, configuring the system, and performing backups
- Open, extensible architecture brings native and third-party information systems into a centralized and interactive user experience for everything from access control to license plate recognition
- Organize your cameras and other devices with a traditional folder device tree or with tags and tag sets, and seamlessly switch between both for amazingly fast device searches
- Edge Storage Auto Gap Fill™ functionality detects when a gap in local camera recording occurs, and automatically downloads video and audio (if present) to fill the gap
- Supports ONVIF-compliant cameras and devices
- Supports DNS hostnames for ONVIF-compliant cameras and Pelco cameras
- Enables and supports Risk Management Framework (RMF) and FIPS 140-3
- Use the powerful VxOpsCenter Client™ to interact with your surveillance system, or check remotely on any computer using the available web browser client
- Optional GIS mapping engine provides lightning-fast interaction between global maps, site maps, and different floors within a map, while providing instant access to every camera on the map, alarm information, and much more
- Available in a software-only solution, for measured performance or convenient migration of customer-owned hardware
- See real-time motion and Pelco camera analytics alarm (Pelco Basic™, Enhanced™, and Advanced Analytics™ Suites) as an overlay on cameras in real-time, playbacks, and exports; and search recorded video based on alarm type and severity
- Supports the Pelco Advanced Analytics Suite that leverages AI-powered technology to improve threat detection

## Overview

VideoXpert is a video management solution designed to fit surveillance operations of any size. Whether your operation has 100 cameras or 10,000, VideoXpert presents a solution to display, record, and manage your video resources. But VideoXpert Enterprise is more than a VMS. It is an enterprise-level video and data management solution designed to combine input from multiple systems, for a cohesive, real-time understanding of events taking place in your environment.

VideoXpert Enterprise products are available as software distributions that you can install on your own hardware, even existing video management hardware. This allows you to repurpose your own hardware and bring existing systems forward into VideoXpert Enterprise.

VideoXpert servers can be clustered to provide redundancy and scalability within a single environment, enabling the system to grow in tune with your surveillance needs. As you add cameras, users, or recording devices, you can add servers and storage, enabling the system to support the additional resources and perform to your expectations. VideoXpert Enterprise can even aggregate other VideoXpert systems, tying multiple VideoXpert systems into a single interface. Through aggregation, administrators can build and maintain a concerted video management system containing multiple sites.

Designed for Windows platforms, VideoXpert is easy to install, quick to setup, and should be familiar to most users. The system supports unicast and multicast transmission modes, making it easy to adapt to your current network scheme. Simplified interfaces ensure that users can adopt and use the system with relative ease. From the VxToolbox™ utility, you can configure the system, manage the database of

devices, configure users and permissions, and assign cameras to recording devices. Through VxOpsCenter software, operators gain access to high quality video and powerful investigative tools.

VideoXpert can integrate with physical security systems and other building systems to deliver situational awareness and control. Built around open standards, VideoXpert includes a complete application programming interface (API), software development kits (SDKs), and dedicated technical support, allowing other systems' manufacturers to develop interfaces leveraging VideoXpert's capabilities. VideoXpert also supports third-party IP cameras, allowing users to choose across hundreds of camera options from Pelco and third-party partners when configuring a system.

VideoXpert consists of four major software components: Core™, Media Gateway™, VxOpsCenter, and Storage Server™. The Core performs central management operations, maintaining the system database, administering user rights and permissions, routing traffic, and other central operations. The Media Gateway handles all requests for video, ensuring that users at all levels of network access, LAN, WAN and even cellular, receive the right type of video for their application. VxOpsCenter Client is the operator console, providing an intuitive, but powerful interface from which users can access and investigate video throughout the system. The Storage Server (VXS) records video and delivers recorded video to users.

### **VideoXpert Core™**

VideoXpert Core™ is the heart of the VideoXpert System™, it maintains the database of cameras, recording devices, users, and permissions. Core works with VxToolbox, from which you can configure and manage the system. Through VxToolbox, you can administer user accounts and permissions, determining the system functions and devices users can access. You can create and assign "tags" to quickly organize cameras and devices within the system. You can also configure and respond to events within the system.

### **VideoXpert Media Gateway™**

The VideoXpert Media Gateway™ routes video traffic to appropriate users as requested. The Media Gateway:

- Routes the video to the workstation in a multicast environment
- Accesses the video in a unicast environment
- Transcodes the video for low-bandwidth connected VxOpsCenter clients

Like Core servers, Media Gateways can be added to VideoXpert modularly. You can add Media Gateways to the system as the media delivery needs increase.

### **VxPortal™**

VxPortal™ is a powerful web-based client which can be used for live, playback, and PTZ. It can also activate relays, acknowledge events, de-warp Optera cameras, create bookmarks, edit camera names and numbers, and start easy exports. VxPortal uses standard web ports, making it easy to provide remote access to your VideoXpert system via MJPEG and H.264.

### **VxOpsCenter™ and VideoXpert Workstations™**

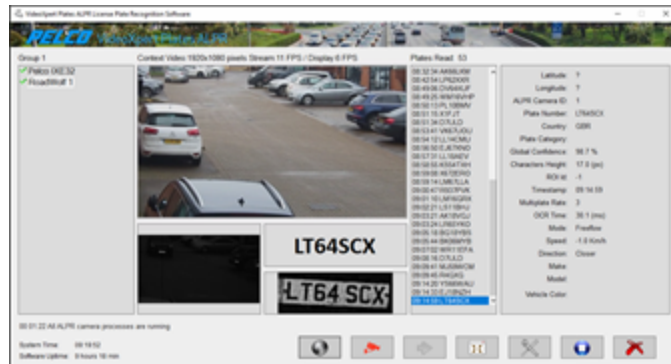
The VxOpsCenter™ is a Windows-based application, providing an optimal environment from which users can watch live and recorded video. With the support of Vx Workstations™, the VxOpsCenter supports up to eight monitors, each capable of displaying up to 25 video streams simultaneously. Through the VxOpsCenter, users can configure and recall complete workspaces, enabling operators to quickly log in and get to work.

The application provides mechanisms to sort cameras by tags and other criteria, making it easy for users to find the cameras they need. Users can switch between live and recorded video on the fly, ensuring a seamless viewing experience. With appropriate permissions, users can also share workspaces and even use the same tabs simultaneously, enabling collaboration within your surveillance operations.

The VxOpsCenter also provides an Investigation Mode, through which users can create playlists from multiple video clips encompassing important scenes from an investigation. Users can export and encrypt their investigations, storing clips relevant to their investigation independent of the system's network video storage for evidentiary safe-keeping and quick access.

The VxOpsCenter supports modular plugins, exposing additional functionality for operators as required by your surveillance operations. The VideoXpert Plates plugin exposes license plate numbers, to track vehicles as they come and go.

VideoXpert mapping enables operators to arrange and find cameras on maps. Through mapping, operators can find the camera providing the view they need, when they need it. Access Control support in VideoXpert mapping allows users to view the status of doors in the building, and allows them to control the door locks.



## VideoXpert Storage™

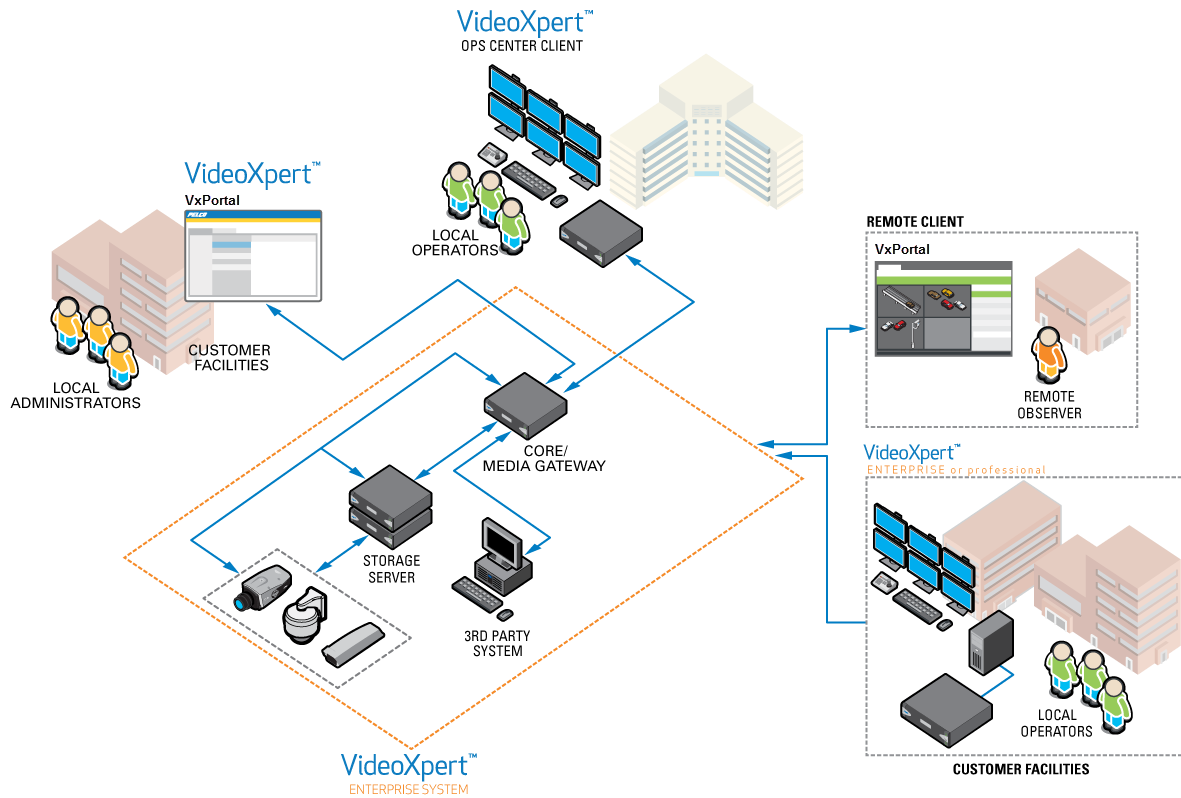
VideoXpert Storage™ (VXS) is a high-performance software application. Through the use of camera drivers, the VXS can support many camera models from almost all camera vendors. VXS supports warm-standby or hot-standby failover configurations so that it can be configured for high-availability, ensuring that your data is always retained and accessible. To make the most of your available disk space, VXS has a flexible scheduling engine which allows you to extend the retention of data on your system without sacrificing the quality of the video that matters most to you.

VideoXpert Storage natively supports third-party IP cameras via ONVIF S, G, Q, and T, and via driver packages, so you can bring your cameras into VideoXpert without expensive translation interfaces.

You can configure Storage through VxToolbox, making it easy to set recording schedules and assign cameras to your storage servers. Storage supports motion, alarm, and bump-on-alarm style recording, so you can always capture events relevant to your environment at high quality. You can set different retention times per camera or camera group. Storage also supports redundant recording, by assigning cameras to multiple recorders, ensuring that VideoXpert continues recording video even if a single Storage server falls offline.

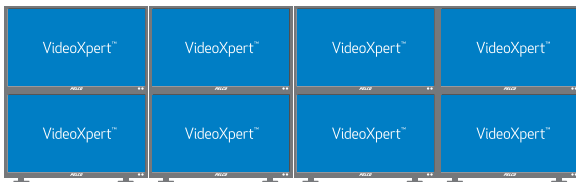
## System Topology When Using VideoXpert Aggregation™

VideoXpert Enterprise™ with Aggregation™ allows for expansion at any level of your security environment. Your system begins with a single server running Core and Media Gateway software. Your system can use dedicated VxOpsCenter Clients to view live and recorded video, or it can use VxPortal™, which fully utilizes HTML5 browser technology to deliver a similarly rich experience with no client software required. As your surveillance needs grow, you can add servers to expand modularly within a single environment, or you can aggregate multiple VideoXpert Enterprise systems to provide a single point of access for distributed video management networks.



## Advanced Operator Controls

In addition to the standard keyboard and mouse, workstations support an Enhanced Keyboard, an Enhanced Mouse, and the KBD5000. The VxOpsCenter software allows for operators to customize their own keyboard shortcuts to the full range of VxOpsCenter controls. The Enhanced Mouse or your existing KBD5000 are mapped to the full range of VxOpsCenter controls.



KBD5000 Jog/Shuttle, Keypad, and Joystick



Enhanced 3D Mouse

## Technical Specifications

### Minimum System Requirements<sup>1</sup>

Item	CMG or Core-only	Media Gateway	VxStorage	VxOpsCenter
Processor	Intel® Xeon® E3-1275 v3			Intel Core i5 64-bit CPU with Intel HD Graphics or better
Memory	32 GB DDR3 ECC	8 GB DDR3	32 GB DDR3 ECC	8 GB DDR3 <sup>2</sup>
Operating System	Microsoft Windows Server 2012 or newer <sup>3</sup>			Windows 10 Pro <sup>4</sup>
Minimum Storage	480 GB	120 GB	200 GB	120 GB
IP version	IPv4 and IPv6			
Video System	Intel HD Graphics P4700 or better		VGA interface <sup>5</sup>	Intel HD Graphics P4700 or better
Interface	Gigabit Ethernet (1000Base-T)			

<sup>1</sup> Software-only systems tested without antivirus software installed.

<sup>2</sup> Minimum Memory required for VxOpsCenter workstations with VxToolbox installed is 16 GB.

<sup>3</sup> Although server OS is supported, VxOpsCenter is not supported in Windows Server OS.

<sup>4</sup> Not all features are guaranteed to work properly with older operating systems.

<sup>5</sup> VxS models are designed to be configured remotely through a web UI.

### VideoXpert Player™

The VxPlayer decrypts, validates, and plays-back secured exports from VideoXpert. You can download the player directly from VideoXpert along with an exported video file or you can download it from Pelco.com. The following sections specify the minimum system requirements for non-VideoXpert machines running the VxPlayer.

VxPlayer can convert exports into user-friendly file formats, including .mp4 and .avi.

### Hardware Requirements

- Dual Core i5 2.67 GHZ
- 4 GB RAM
- 200+ GB of free HDD space or more
- GPU that supports OpenGL 3.0 or higher
- 1024 x 768 or higher screen resolution
- 100/1000 Ethernet Network Interface Card
- Sound Card



## **Software Requirements**

- Windows 10 Pro 64-bit
- .NET 4.6.1 or higher
- OpenGL 3.0 or higher
- Direct3D 9 or higher

## **Security**

VideoXpert includes the following security features:

- Client authentication
- Passwords stored with cryptographic protection
- Configurable roles and permissions
- User action reports
- TLS-based encryption over HTTPS
- Support running with antivirus
- Ability to encrypt exports
- Synchronized system clocks using NTP
- Supports video and data encryption using AES-128-256 through third-party disk encryption software.
- Incorporates FIPS 140-3 validated cryptographic modules
- FISMA/NIST Configuration Guidance – This guide will help organizations documenting the system through their RMF process with information about:
  - How to categorize the system
  - Which NIST-based security controls are applicable
  - How VX implements NIST-based security controls
- FISMA/NIST Compliance Testing – VideoXpert is installed on a FISMA representative system with applicable DISA STIGs (Defense Information Systems Agency, Secure Technical Implementation Guidelines) and tested for functionality. Applicable STIGS include:
  - Microsoft Windows 10 for VxOpsCenter and VxToolbox
  - Microsoft Windows Server 2016 and 2019 for VideoXpert Core™ and Media Gateway™
  - Microsoft .Net Framework 4
  - Microsoft Internet Explorer 11
  - Microsoft Windows Firewall and Advanced Security
  - Postgres Database 9.x for VideoXpert Core and Media Gateway, and for VxStorage™
- Conforms to SB327 requirements (and international iterations of such) by enforcing default password changes upon initial configuration.

## Supported Languages

The VxToolbox, VxPortal, and VxOpsCenter interfaces are available in the following languages:

- Arabic
- Brazilian Portuguese
- Bulgarian
- Croatian
- Czech
- German
- French
- Hungarian
- Italian
- Korean
- Polish
- Romanian
- Russian
- Simplified Chinese
- Spanish for Latin America
- Turkish

## Software Licenses

Use the following table to create a model number for your VideoXpert Enterprise software package. Your model number consists of the distribution you want to choose and the model/software product you want to install. For example, an Enterprise Core license is modeled “E1-COR-SW”. For VideoXpert Storage and Aggregation features, you must use camera licenses; each camera utilizing VxStorage or Aggregation will consume a single license.



**Note:** VxOpsCenter software does not require a license. You can install the software on any workstation meeting the system requirements.

Each camera/encoder on a VideoXpert system requires a channel license. To enable upgrades to VideoXpert software, an active SUP is also required.

Due to the complexity of network and system design for larger distributions, VideoXpert Enterprise with aggregation requires either training certification, or that the installation be performed by Pelco Professional Services. While not required for Enterprise distributions, it is strongly recommended that system installers and administrators be Pelco-certified.

Model	Description
E1-COR-SW	Core software license
E1-MGW-SW	Media Gateway software license
E1-VXS-SW	VxStorage software license



Model	Description
E1-1C	One camera license for VideoXpert Enterprise, plus one year SUP
E1-1C-SUP1	Extension to current channel license (SUP); entitles you to upgrades for one year. One per channel is required.
E1-1C-SUP3	Extension to current channel license (SUP); entitles you to upgrades for three years. One per channel is required.
U1-AGG-1C	Optional one-camera license for VideoXpert Enterprise to aggregate into another VideoXpert Enterprise system. Professional services are recommended.
CLAA1-DLP	One permanent camera license for Pelco Advanced Analytic Suite, DNN People and Vehicle detection, in Zone, Counter-flow, and counting.
E1-NSM-1UP	Enables VxEnterprise to use the Endura NSM5200/NSM5300 as a storage device with up to 100 channels.
E1-NSM-1UP-50	Enables VxEnterprise to use the Endura NSM5200/NSM5300 as a storage device with up to 50 channels.
E1-NSM-1UP-25	Enables VxEnterprise to use the Endura NSM5200/NSM5300 as a storage device with up to 25 channels.
VX-ASCII	ASCII Service
VX-EVENT-MON	Event Monitoring Service to network I/O devices
VX-SNMP	SNMP Monitoring
VX-CONNECT	VxConnect to relay RTSP

### Optional Accessories

- **VX-A5-SDD** Shared Display Decoder with US, Europe, and United Kingdom power cords
- **3DX-600-3DMOUSE** Enhanced 3D Mouse and Joystick
- **KBD5000** Keyboard with Jog/Shuttle, Keypad, and Joystick
- **PMCL622** Full High-Definition LED Monitor, 22"
- **PMCL624** Full High-Definition LED Monitor, 24"
- **PMCL632** Full High-Definition LED Monitor, 32"
- **PMCL643K** 4K Ultra-High-Definition LED Monitor, 43"
- **PMCL649K** 4K Ultra-High-Definition LED Monitor, 49"
- **PMCL655K** 4K Ultra-High-Definition LED Monitor, 55"
- **PMCL665K** 4K Ultra-High Definition LED Monitor, 65"
- **HDDKIT-12TB** 12 TB hard disk drive with carrier
- **HDDKIT-12TB-SAS** 12 TB SAS hard disk drive with carrier
- **HDDKIT-16TB-SAS** 16 TB SAS hard disk drive with carrier



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