



Nextiva IP Cameras

Transforming Video into *Value*

VERINT SYSTEMS INC.

July 2008

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VINED020708U
Version 2.0

Why IP Cameras? And Why Nextiva?

With more organizations recognizing the value of IP video, the proliferation of IP cameras is in full swing. According to IMS Research, the IP video market, valued at \$500 million today, is growing at 3 times the rest of the video surveillance space.¹ Frost and Sullivan projects US IP camera sales to reach \$1.17 billion by 2010, up from \$229 million in 2007. Meanwhile, analog camera sales are expected to decline from \$665 million in 2007 to \$432 million in 2010.²

IP cameras offer several advantages over their analog counterparts, including integrated analytics³, available Power over Ethernet (PoE), and built-in processing power, and are clearly part and parcel of migration to IP video. The Verint® lineup of IP cameras takes these benefits one step further, integrating sophisticated IP camera and embedded analytic technology with the industry's most comprehensive video solution portfolio for enhancing security and operational effectiveness. This integration streamlines IP camera management and reduces deployment costs, while promoting rapid communication of events, video, and data throughout the video system infrastructure. It powers a more proactive and effective approach to security and performance.



Before we take a look at the Nextiva IP cameras, it is important to understand why integration with Nextiva is so important.

The Nextiva IP Video Portfolio

Nextiva is a powerful, integrated video solution portfolio for enhancing security and operational effectiveness — a “single source” for virtually every facet of video surveillance operations. Nextiva video encoders, IP cameras, and intelligent DVRs capture images from practically *any* stationary or mobile location,

with the industry's leading wired and wireless edge device technology. Nextiva's integrated, on-board analytics rapidly detect significant activity in vast amounts of video and data for faster, more effective action. Nextiva's robust video management software, intel-

ligent video distribution, and system health monitoring simplify management of large, geographically-distributed operations. And Nextiva suites for the enterprise, critical infrastructure, mass transit, retail, and banking address industry-specific challenges and deliver superior business value.



The Advantages of Nextiva Integration

Nextiva IP cameras are part of the Nextiva video solution portfolio and are designed for complete integration with other Nextiva solutions. With Nextiva, organizations can select IP video solutions for a variety of video surveillance functions knowing that integration comes built in. This interoperability reduces the need for additional costly services, streamlines installation and administration, reduces cost of ownership, and promotes highly effective performance and successful outcomes.

Automatic Event Detection with Reduced Network, Storage, and Server Requirements

Video captured by Nextiva IP cameras can be analyzed at the point of capture using Nextiva on-board analytics⁴ without the cost of additional integration services. These on-board analytics reduce reliance on centralized servers for analysis and decrease data transport and storage requirements. And they enable organizations to scale their analytic capabilities more readily and cost effectively. A wide array of Nextiva analytic applications is available for use with Nextiva IP cameras, including detection of perimeter intrusion, suspicious objects left behind, equipment removed, camera tampering, wrong direction, excessive speed, and more.

Rapid, Policy-Based Video Distribution to the Appropriate Personnel and Agencies

Nextiva IP cameras are fully integrated with Nextiva IntelliFlow, for rules-based video distribution, and Nextiva IntelliStream, virtual matrix software for distributing images to video walls and computers. This means that alarms, alerts, video, and data can be rapidly transmitted to the appropriate staff, outside agencies, and first responders according to the organization's policies, without additional integration efforts or problems. Nextiva integration thus expedites communication of potential threats and crisis situations, facilitating a more proactive approach to security and more effective emergency event response.

More Productive Investigations

Nextiva IP cameras are fully integrated with Nextiva Investigation Management, a software application that enables users to aggregate case-related video captured by one or more Nextiva IP cameras, as well as case-related audio and data, in a searchable database. Nextiva Investigation Management streamlines investigations and makes them more productive.

Easier Installation and Management, Plus Lower Cost of Operation and Administration

Nextiva IP cameras are also fully integrated with Nextiva HealthCheck, which provides automated, system-wide health monitoring, diagnostics, and alerts, enabling a more proactive approach to system uptime, availability, and reliability. And Nextiva IP cameras can be centrally configured and administered using Nextiva Control Center software, an intuitive management portal that simplifies installation and the administration of virtually any number of cameras.

Organizations also have the flexibility to manage their Nextiva IP cameras with third-party video management software. See the *Appendix* for information about the Nextiva Advantage SDK, which facilitates integration of Nextiva IP cameras with other video management systems.

Nextiva IP Cameras

Features That Make the Difference

The Nextiva IP camera lineup comes available with an impressive array of features for a variety of applications and environments.

Available Features⁵	Benefits
Digital Pixel System (DPS) image sensor technology	Provides exceptional dynamic range, less image “noise” than many other sensors, highly accurate colors in different lighting conditions (indoor, outdoor, fluorescent), and elimination of such artifacts as vertical smearing and pixel blooming
High-quality, vari-focal lenses with auto-iris technology and color or day-to-night functionality	Optimizes image quality in a variety of lighting conditions, producing clear, crisp, and accurate images
Support for both interlaced and progressive scan video	Provides distortion-free images on analog and digital video monitors, delivering the benefits of IP video using existing analog equipment
Vandal-resistant, weatherproof housing and extended temperature support	Designed for reliable performance indoors and outdoors, even in conditions marked by significant temperature fluctuations
Dual streaming	Allows video to be viewed at high resolution for excellent image clarity, but stored at lower resolution for optimal use of storage resources
The industry’s top encoding technology and MPEG-4 codec	Delivers superior imagery with optimal use of network bandwidth, providing high performance even in environments with little or no motion
Embedded video analytics	Automatically detects significant activity without sending all video to centralized servers for analysis, reducing use of network bandwidth, servers, and storage
Triple axis lens rotation system and auxiliary analog output	Streamlines installations, with greater flexibility in camera placement and adjustment
Analog output and Power over Ethernet (PoE)	Streamlines installation and reduces cabling and power requirements, so that cameras can be installed without additional power supplies
Full integration with the Nextiva video solution portfolio	Streamlines camera installation, configuration, and management and enables faster, policy-based distribution of alarms, video, and data to the appropriate people and agencies
Open and built on industry standards	Easy interoperability with existing IT infrastructures and video equipment, for rapid deployment and reliable operation
The flexibility to manage with Nextiva or third-party video management systems (via the Nextiva Advantage SDK)	Leverages video management solutions already in place and lets organizations select the video management solutions that best fit their objectives and budgets

See the Appendix at the end of this guide for general information about form factor, encoding, embedded analytics, Power over Ethernet, and the Nextiva Advantage SDK.

Super-Wide Dynamic Range IP Cameras: Nextiva S2600e and S2610e

The Nextiva S2600e and S2610e professional IP cameras feature super wide dynamic range (102 dB), DPS image sensor technology, and low lux sensitivity for excellent image quality in high-contrast and day/night lighting conditions. These features allow the camera to be installed virtually anywhere with consistently accurate, high-quality pictures throughout the day. The camera also generates a small amount of noise, which translates to more efficient compression and lower bitrate.

Designed for high performance and low cost of ownership, the S2600e and S2610e incorporate Verint's industry-leading encoding technology to provide excellent image quality, while using far less network bandwidth than comparable high-end IP cameras. Available on-board analytics rapidly detect significant activity without sending all video to centralized servers for analysis, further reducing the amount of video to transport and store. Dual-stream video at 4CIF/30fps enables high-quality video viewing and optimal storage use, and support for both interlaced and progressive scan video provides distortion-free images on analog and digital video monitors, enabling organizations to continue leveraging their analog video equipment.

The S2600e and S2610e are built for easy installation and operation in virtually *any* video system. They can be installed using a browser-based Verint wizard or Nextiva Enterprise. An analog output comes standard with the S2600e and S2610e for fast and accurate setup on site, and available Power over Ethernet reduces wiring requirements and installation costs.

The S2600e/S2610e can be managed using Nextiva Enterprise or other video management software. The Nextiva Advantage SDK facilitates third-party integration, so that organizations can select the video management, security, and business solutions that best address their objectives and budget.

At a Glance

Description: Super wide dynamic range IP camera for indoor or outdoor use with support for interlaced and progressive scan video, day/night function (S2610e only), and the industry's most effective video encoding technology

Options: Embedded video analytics (licensed separately), 2.7 zoom lens

Installation: Easy installation using a Web wizard or Verint Nextiva, with analog output and PoE to simplify setup

Management: Manage using Verint Nextiva or third-party video management systems



Full-Featured, IP Mini-Dome Cameras: Nextiva S2700e and S2700e-VR

The Nextiva S2700e and the vandal-resistant S2700e-VR are full-featured IP mini-dome cameras that use CCD sensors for high-quality images with a horizontal resolution of 540 TV lines.

These IP mini-domes deliver MPEG-4/MJPEG, dual-stream, DVD-quality video at 4CIF/30fps and automatically adjust to black-and-white mode in low-light conditions for optimal image clarity. Low lux sensitivity produces clear, crisp images in even poor lighting conditions.

The S2700e and S2700e-VR also use auto-iris technology that automatically adjusts the amount of light that reaches the image sensor, optimizing image quality in a variety of lighting conditions.

A triple axis lens rotation system provides superior flexibility in camera placement and adjustment, allowing camera installation practically anywhere. Power over Ethernet (PoE) is available with both models.

The S2700e-VR is ideal for both indoor and outdoor use. Built to withstand wide variations in temperature and weather (IP66 rated), the S2700e-VR features a vandal-resistant alloy casing and polycarbonate dome that protect the device from tampering, as well as dust, rain, and extreme temperatures.

At a Glance

Description: IP mini-dome cameras with day/night function, CCD sensor for highly accurate images, color and automatic day-to-night use, 12V DC power supply, and vandal-resistant/dustproof/weatherproof housing (S2700e-VR only)

S2700e Options: Clear dome cover, PoE injector

S2700e-VR Options: Extended temperature support, PoE injector

Installation: Plug-and-play surface or flush mount mechanism, triple axis lens rotation system for flexible placement and adjustment, and analog output port for camera-side setup and test

Management: Manage using Verint Nextiva or third-party video management systems



S2700e



S2700e-VR

Cost-Effective IP Mini-Dome: Nextiva S2750e

The Nextiva S2750e is a versatile, IP mini-dome camera that provides excellent image quality and a robust feature set at an attractive price.

Designed to deliver MPEG-4 SP and MJPEG video up to 30fps at VGA resolution, the S2750e features a vari-focal, auto-iris lens and a Sony Super HAD CCD sensor for superior image clarity in even low light and a wide choice of viewing angles (with 480 TVL horizontal resolution). The S2750e readily changes from color to black-and-white mode in day-to-night applications. And Verint's industry-leading video encoding technology and dynamic noise reduction filter enhance image quality, while reducing bitrate for highly efficient video transfer over IT networks.

A sophisticated mechanical design, triple axis lens rotation system, Power over Ethernet, and auxiliary analog output streamline installation and simplify camera placement. The S2750e can be surface mounted on ceilings or walls, with superior flexibility in camera placement, enabling 1.5° incremental adjustments up to 360° pan, 90° tilt, and 360° rotate.

The feature-rich S2750e makes high-resolution IP cameras practical and affordable for virtually any indoor application.

At a Glance

Description: Cost-effective IP mini-dome camera with vari-focal, auto-iris lens and Super HAD CCD sensor for excellent imagery at an affordable price

Options: Smoked cover, 12V DC power supply, PoE injector

Installation: Triple axis lens rotation system for flexible placement and adjustment, and analog output port for camera-side setup

Management: Manage using Verint Nextiva or third-party video management systems



High-Performance IP PTZ Camera: Nextiva S2800e

The Nextiva S2800e IP PTZ camera combines industry-leading Verint encoding technology with the feature-rich Vicon SurveyorVFT camera dome. The result is a high-performance IP PTZ camera with superior imagery, lower network bandwidth utilization, and full integration with the Nextiva video management portfolio.

This feature-rich IP PTZ camera may be deployed for color or day-to-night operation in environments characterized by low light or a wide range of lighting conditions. The S2800e features a digital slow shutter for low-light applications. Some models also feature wide dynamic range for excellent contrast and high-quality imagery and an EIS image stabilizer. Verint encoding technology delivers dual stream, MPEG4-SP or MJPEG video up to 4CIF/30 frames per second.

The S2800e features programmable tilting, autopan, and alarm inputs, offering a 360° continuous rotation pan/tilt drive with 79 programmable preset positions, each with a preset solve accuracy of 0.1°. Some models also offer 16 individual programmable privacy masks, and motion detection capabilities are available on day/night models.

In addition, the S2800e is easy to install and manage. The camera simply snaps into the housing, which retains all programmed functions in its on-board memory when the camera is removed. The S2800e is managed using Nextiva Enterprise.

At a Glance

Description: Full-featured IP PTZ camera with Vicon SurveyorVFT dome, color or day/night operation, and programmable tilting, autopan, and alarm inputs

Options: Available in a wide selection of camera types, housings, and mounting options

Installation: Camera snaps into housing, which retains all programmed functions

Management: Manage using Verint Nextiva



Which Nextiva IP Camera Is Right for You?

Nextiva IP cameras are available for virtually every objective, environment, application, and budget.

Features	S2800e	S2600e & S2610e	S2700-VR	S2700e	S2750e
Description	IP PTZ dome with snap-on installation, on-board memory, low power consumption, and 360° continuous rotation pan/tilt drive	Super-wide dynamic range professional IP cameras with support for interlaced and progressive scan video	Full-featured IP cameras; S2700e-VR is IP66 vandal-resistant with waterproof/dustproof housing and optional extended temperature support		Attractively priced camera with robust feature set
Body Type	PTZ dome	Fixed	Fixed mini dome	Fixed mini dome	Fixed mini dome
Sensor	1/4-inch interline transfer CCD	1/3-inch digital sensor	1/4-inch IT CCD	1/4-inch IT CCD	1/3-inch Sony Super HAD CCD
Camera Type	Color or true day/night	Color or true day/night	Color, automatic day/night	Color, automatic day/night	Color, automatic day/night
Maximum Performance	4CIF/30fps	4CIF/30fps	4CIF/30fps	4CIF/30fps	VGA/30fps
Dual Streaming	•	•	•	•	•
On-Board Analytics ⁶		• (S2600e-AS & S2610e-AS)			
Environment	Indoor/outdoor (depending on model)	Indoor	Indoor/outdoor	Indoor	Indoor
Vandal/Weather Resistant	Some models vandal-resistant		•		
Extended Temperature Support	Outdoor models only		•		
PoE Support		• (S2600e & S2610e)	•	•	•
Triple Axis Lens Rotation System			•	•	•
Mount Type	In-ceiling or pendant	¼-inch screw	Surface	Flush or surface	Surface
Alarm I/Os	•	•	•	•	

For more information about Nextiva IP cameras, contact your Verint representative, call 1-866-NEXTIVA, email videoinfo@verint.com, or visit verint.com/videosolutions.

Appendix: Points to Consider

A. One Size Doesn't Fit All: Choosing a Form Factor

Fixed/Body Camera

Rectangular body; fixed viewing angle; clear where camera is pointing

- **IDEAL ENVIRONMENT:** Where risk of vandalism is relatively low; where visibility and clear direction of camera will likely act as deterrent to undesirable activity
- **BENEFIT:** Exchangeable lenses
- **DRAWBACK:** Relatively easy to tamper with

Fixed Dome Camera (Mini Dome)

Fixed camera pre-installed in small dome-like housing; difficult to see where camera is pointing

- **IDEAL ENVIRONMENT:** Where uncertainty of viewing angle can put off potential wrongdoers
- **BENEFITS:** Discreet (available with clear or tinted dome), unobtrusive design; can be mounted on wall or ceiling
- **DRAWBACK:** Uses one type of lens only

PTZ Camera

Comes in standard or dome housing

- **IDEAL ENVIRONMENT:** Where live monitoring is desired or where a person's activity or an object's movement needs to be tracked (PTZ cameras can be operated in guard tour mode, allowing the camera to move between preset positions, and can be controlled using joysticks. Mounting kits are also available to allow for outdoor or indoor installations.)
- **BENEFIT:** Lens can be adjusted remotely to capture different views from a single location
- **DRAWBACKS:** More expensive and can miss activity

B. Encoding: The Key to Efficient Video Streaming

One of the things an IP camera does is encode video — that is, it digitizes images, compresses them, and then sends them over an IP network to be viewed or stored.

Some encoders are more efficient than others at preserving the quality of video even as they compress it, “intelligently” reducing the bitrate to limit the amount of data that gets streamed over the network. MPEG-4 is the compression standard used by most IP cameras, but that codec can be tweaked further for optimal performance.

In surveillance environments where there is little motion, and therefore minimal change from frame to frame of video, or where objects take up only a small portion of the frame, an efficient encoder can achieve an even lower bitrate by optimizing compression. Reducing the bitrate even further can be achieved by turning on the dynamic noise-reduction filter, which eliminates unnecessary noise. In that way, the encoder can dramatically reduce the amount of network bandwidth and storage that is used, translating into substantial cost-savings for enterprises with video security operations.

Dual Encoding

A camera with dual-encoding (otherwise known as dual-streaming) capability can compress video using two different logical encoders, each with different parameters. That way, video to be viewed live can be encoded at a different frame rate and resolution than video fed to storage devices, conserving both bandwidth and storage on a company’s network.

C. On-Board Analytics: Making Next-Generation IP Video Systems “Smarter”

A camera that can detect “events,” whether somebody loitering outside a secured area or a PC that goes missing from a computer lab, can save an organization time, storage, and bandwidth.

By analyzing video at its origin — the camera — and transferring only noteworthy footage to viewing screens and storage devices, on-board analytics can significantly cut down on the amount of time that organizations spend sifting through video clips to find event-related images. It



On-board analytics can detect meaningful changes in sequential video clips and trigger alarms. In the scene pictured above, a PC has been removed from the

can also reduce the volume of video flowing through network cables, the amount of space used on storage devices, and the need for back-end servers.

In addition, analytics can help an organization monitor and maintain its video equipment from a centralized location. Camera tampering analytics, for example, enable key personnel to know whether a network camera is out of focus. In an enterprise with a sizable video security solution, being able to remotely monitor equipment en masse can make the difference between a streamlined, efficient surveillance operation and one that is poorly managed and underutilized.

D. The Power of PoE

With Power over Ethernet (PoE), both data and electrical power are delivered to the IP camera over standard, twisted-pair Ethernet cable. This feature is important, given the potential inconvenience, costliness, and/or impracticality of supplying power to all of these devices separately.

The main benefits of PoE:

- Lower cost: IP cameras can be installed without the additional cost of hiring an electrician to install power outlets at every camera location. And since PoE is compatible with other Ethernet protocols, it helps protect existing IT investments.
- Increased flexibility: Cameras can be deployed where needed, without concern about the proximity of an available power supply.
- Enhanced reliability: Centralized, SNMP-manageable power sources are less susceptible to power overloads, surges, and spikes.

E. The Nextiva Advantage Software Development Kit: Using Third-Party Video Management Software

The Nextiva Advantage Software Development Kit (SDK) lets you rapidly integrate Nextiva IP cameras — including powerful, embedded analytics — with third-party video management systems. This integration enables organizations to continue using the video management solutions that best suit their objectives, operating environments, and budgets. Plus, it offers our partners the opportunity to deliver more differentiated and compelling solutions to a highly competitive marketplace.

By providing all of the necessary interfaces for pushing analytic rules and video alerts to third-party video management solutions, the Nextiva Advantage SDK streamlines integration and enables information to be freely exchanged between Nextiva edge devices and third-party video management products. This accelerates the flow of information to security staff and the appropriate external agencies, for more proactive security and more effective crisis management.

Endnotes

¹ *The World Market for CCTV & Video Surveillance Equipment*, Simon Harris and Alistair Hayfield, IMS Research, November 2007.

² *U.S. & Worldwide Video Surveillance Market*, JP Freeman, 2006.

³ Nextiva analytic applications must be licensed separately.

⁴ Not all features are available on all cameras. Consult the individual camera descriptions for details.

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