

Video Surveillance Solution Brief

The Challenge – Massive Scalability, Operational Integrity, Cost Controls and the Transition to IP-Based Video Surveillance

According to ABI Research, the global video surveillance market will grow from \$19B (USD) in 2008 to \$45B by 2013. Vendors in the video surveillance market know that, unlike Hollywood, there are no re-takes in this market. Video Surveillance is vital for awareness, response, investigation, and evidence requirements in military, public safety, retail loss prevention, and other security areas. Operational integrity and high availability are fundamental requirements for building a viable video surveillance system. The second major requirement is the ability to reliably store and recall massive quantities of content, efficiently and cost effectively. In the same report, ABI Research indicated that the storage portion of the global video surveillance market will grow from \$6B in 2008 to \$13B by 2013. Finally, the video surveillance market is undergoing a fundamental transition from CCTV (Closed Circuit Television) to IP-based video systems. The IP camera business is projected to grow from under \$1B in 2008 to \$10B by 2013.

- ◇ **Reliable Delivery of the Video Surveillance** – Operational integrity and high availability are absolutely vital for the video surveillance market. As the market transitions to an IP-based paradigm, how can IP-based storage be used to achieve maximum systems and data integrity? This is a strategic question that must be asked by customers and vendors of video surveillance systems.
- ◇ **Improved Security with Lower Overhead** – Video surveillance is a vital tool in budget-constrained environments. It provides a method to scale the effectiveness of human resources and uses video analytics to increase awareness, improve responsiveness, monitor ongoing incidents and support investigations with solid evidence.
- ◇ **Massive Scalability** – Scalability is a multi-dimensional topic in video surveillance. It refers to raw storage capacity for content, support for thousands of concurrent video streams (recording and playback) and analytics/search/cataloging capabilities. As the data from ABI Research indicates, the market will almost triple in the next five years. This is driven by increased video surveillance from governments, retail, education, institutional, banking, transportation and corporate market segments.
- ◇ **Improved ROI via the IP Transition** – Each dollar spent on capital expenditures (CapEx) needs to return greater revenue and lower costs per media streams. Operators in the video surveillance world are entering a new round of CapEx, based on the move from CCTV to IP-based video systems. This fundamental infrastructure change will coincide with the IP market's move from 1Gb to 10Gb back bones that provide the required performance and scalability demands of this growing market. Video surveillance customers and vendors who supply them need new solutions that maximize this investment, accelerate deployment of new applications and simplify field management.
- ◇ **Cost Controls** – As the video surveillance market climbs to \$45B by 2013, economies of scale must be achieved to support the industry growth with the ability to scale capacity, performance, responsiveness and reliability while simultaneously lowering the cost per stream to help customers and agencies remain relevant, vigilant and competitive on a global scale. Next-generation video surveillance applications will require next-generation 10Gb IP architectures to meet the growing demands.
- ◇ **Networked Surveillance, IP and Computing Standards Lower Operational Cost** – As agencies, businesses and other institutions need to share video information and data, the ability to share information over an IP-based network is critical. One of the key value propositions for supporting the transition from CCTV to IP-based networked video is leveraging industry and government standards to achieve lower acquisition, service and FRU costs and to improve awareness, responsiveness, investigation and evidence capabilities using off-the-shelf systems.

The Requirements – Video Surveillance Application Requirements

Storage is a foundational service for deploying and scaling video surveillance systems. The following table outlines the key application storage requirements to support scaling of current deployments and the introduction of new applications.

Application	Storage Requirement					
	High Availability	High IOPS	Scalability	Rapid Response	Multiple Streams	Capacity on Demand
Video Capture	✓		✓		✓	✓
Video Playback	✓		✓	✓	✓	
Analytics	✓	✓		✓	✓	
Meta Data Search	✓	✓	✓	✓	✓	

Video Surveillance



The Solution - Astute Networks Edge Storage Architecture

Astute Networks' Edge Storage Architecture (ESA) provides the storage solutions required to help customers and vendors meet the myriad of standards, application and technical demands of video surveillance for public safety, retail, transportation, banking and corporate needs on the global stage. The Caspian family of edge storage blades are based on Astute Networks' high-performance, low-power, green-friendly 10Gb ASIC technology. The Caspian meets the rigorous design criteria demanded by video surveillance systems vendors that includes: support for NEBS Level 3, advance cooling solutions that keep high-performance 15K SAS disk drives operational under extreme conditions and a 100% high availability (HA) architecture to create a solution with the right built-in capabilities.

- ◇ Built-in Reliability
- ◇ Built-in High Performance
- ◇ Built-in Rack Density
- ◇ Built-in Deployment Simplicity
- ◇ Built-in Power Savings
- ◇ Built on Open Standards

Application	Storage Requirement	Caspian Storage Solution Proof Points
Video Capture	<ul style="list-style-type: none"> • Individual Stream QoS • HA Edge Storage • 1000s of Streams • High IOPs • Scalable Capacity • Interactivity Response 	<ul style="list-style-type: none"> • 1.3 Gb Sec transfer rates • 140K IOPs/Blade pair • 120 SAS or SSD Media Stream Scaling • NEBS Reliability • Spanned RAID Striping • 10Gb Bandwidth
Video Playback	<ul style="list-style-type: none"> • Individual Stream QoS • HA Edge Storage • 1000s of Streams • High IOPs • Scalable Capacity • Interactivity Response 	<ul style="list-style-type: none"> • 1.3 Gb Sec transfer rates • 140K IOPs/Blade pair • 120 SAS or SSD Media Stream Scaling • NEBS Reliability • Spanned RAID Striping • 10Gb Bandwidth
Analytics	<ul style="list-style-type: none"> • HA Storage • High IOPs • Rapid Response 	<ul style="list-style-type: none"> • 140K IOPs/Blade pair • 120 SAS or SSD Media Stream Scaling • NEBS Reliability
Meta Data Search	<ul style="list-style-type: none"> • HA Storage • High IOPs • Rapid Response 	<ul style="list-style-type: none"> • 140K IOPs/Blade pair • 120 SAS or SSD Media Stream Scaling • NEBS Reliability

The Benefits – High Availability, IP Networked Surveillance, Lower Capital & Operational Costs, Multi-Dimensional Scalability

The key benefits of deploying the Astute Networks Caspian Edge Storage Blade family is that it provides the right storage solutions to meet the business, operational and application needs of the video surveillance market. The Caspian does this in four ways:

- ◇ High-Availability Deployment and Delivery – The Astute Networks ESA has the built-in reliability (NEBS, low power, easy cooling) and simplicity of management (single SMNP console) required to make deploying and supporting applications easy and predictable. Since Caspian is ATCA based, it can be pre-configured and shipped to edge installations without the additional complexity of external FC storage (HBAs, cables, storage chassis), which can significantly lessen time and personnel required for system configuration.
- ◇ Lowers CapEx and Operational Costs – Astute Networks' ESA based solutions reduce storage CapEx costs by 33% versus external Fibre Channel storage. This improves ROI and reduces the CapEx and cost per video stream supported. The Caspian Edge Storage Blade family lowers operational cost vs. external FC storage by leveraging existing ATCA infrastructure, lowering FRU counts, and reducing power consumption by 60% over external storage or dedicated media systems.
- ◇ Multi-Dimensional Scalability – Caspian is based on Astute Networks' advanced 10Gb ASIC that offloads iSCSI overhead for scalable high performance transfers. It also supports thousands of media streams with up to 120 SAS or SSD drives to meet transactional, streaming and capacity requirements. The ESA supports the multi-dimensional scalability requirements of the key video surveillance applications including raw storage capacity for content, support for concurrent video streams (recording and playback) and analytics/search/cataloging capabilities.
- ◇ IP Video Networks - A Strategic Advantage – Caspian IP-based storage solutions using 10Gb iSCSI, assist agencies, businesses and other institutions that need to share video information and data over IP-based networks. The move from CCTV to IP based video surveillance is on, and Astute Networks provides a key strategic capability required to build next generation IP-based solutions to meet the complex technical, business, operational, and cost demands of the video surveillance market.

To Learn More

To learn more about the Astute Networks Edge Storage Architecture and the Caspian family of edge storage blades please visit us at www.astutenetworks.com.

Astute Networks, Inc.

Corporate Headquarters

16516 Via Esprillo, Suite 200
San Diego, CA 92127
858.673.7700

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Website:
www.astutenetworks.com

Information:
edgestorage@astutenetworks.com