Technical Guide

PROMISE Vess A8020 NVR Appliance and

NetworkOptix Nx Witness VMS v.5

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Introduction

The Vess A8020 is designed especially for customers seeking an ultra-reliable premium quality video surveillance storage appliance in a compact size. It is especially well-suited for use in ATMs, small specialty retailers, residences, or any environment where discretion, concealment and physical security of the system hardware is required. Can be operated, managed and backed up remotely.

Perfect for small surveillance network in small space or hardened security unit where failure is not an option. Hot swappable drive bays to ensure Vess A8020 is easy in administration, maintenance and service.

Form Factor	Tower 2bay
Dimension (WxDxH)	185 x 245.2 x 130 mm
CPU	I3-9100E (Intel 9th)
Graphic Engine	Intel UHD 630
PSU	250W
Memory	8GB (Max. 32GB)

M.2 (OS drive)	128GB
Fan	2 x Fan (1 x CPU and 1 x System)
Display Interface	D-Sub, HDMI and DisplayPort
Network Interface	D-Sub, HDMI and DisplayPort
USB Interface	6 x USB3.0 and 2 x USB2.0
Audio	3 x 3.5mm Audio Jack and S/PDIF

Key Features of A8020

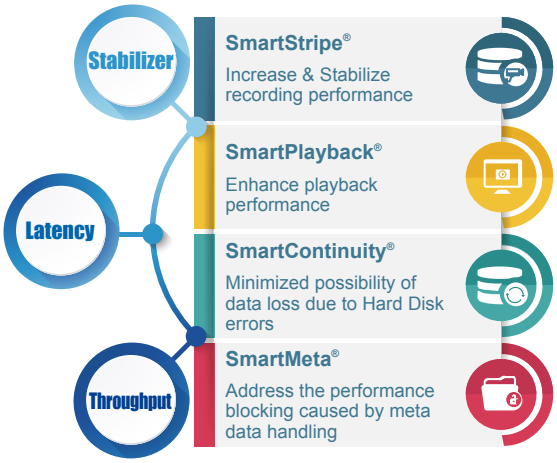
Optimized Solution for Surveillance

Specially engineered for IP video surveillance deployment on smaller scale networks that require robust, reliable video storage and management; or where discretion and physical security of the system hardware is required, such as banks, ATMs, luxury shops.

SMARTBOOST™ Technology

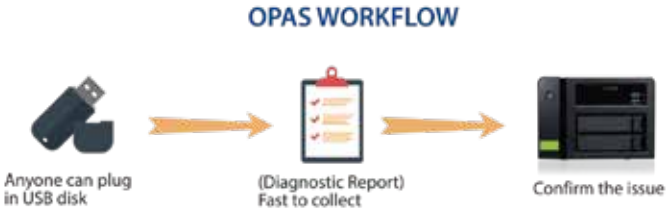
PROMISE proprietary SMARTBOOST™ Technology creates the most stable and high-performance storage solution for your surveillance system. Performance that can be limited by storage equipment bottlenecks is significantly improved by PROMISE SMARTBOOST™ Technology. With the optimized software features and Vess A8020 has the best stability and storage performance with the best C/P ratio.

With combination of VA8020 and Nx Witness VMS 5.0 it gives us total Surveillance solution equipped with PROMISE SMARTBOOST™ Technology along with Failover and Object Search possibilities for best security and user experience.



OPAS

One Plug Auto Service (OPAS) is a feature unique to PROMISE's video surveillance solutions which is designed to offer a new level of user convenience that also helps reduce maintenance complexity and streamlines technical support. OPAS helps users easily collect all the necessary logs and data for the PROMISE support team to analyze the status of Vess A-Series NVRs.

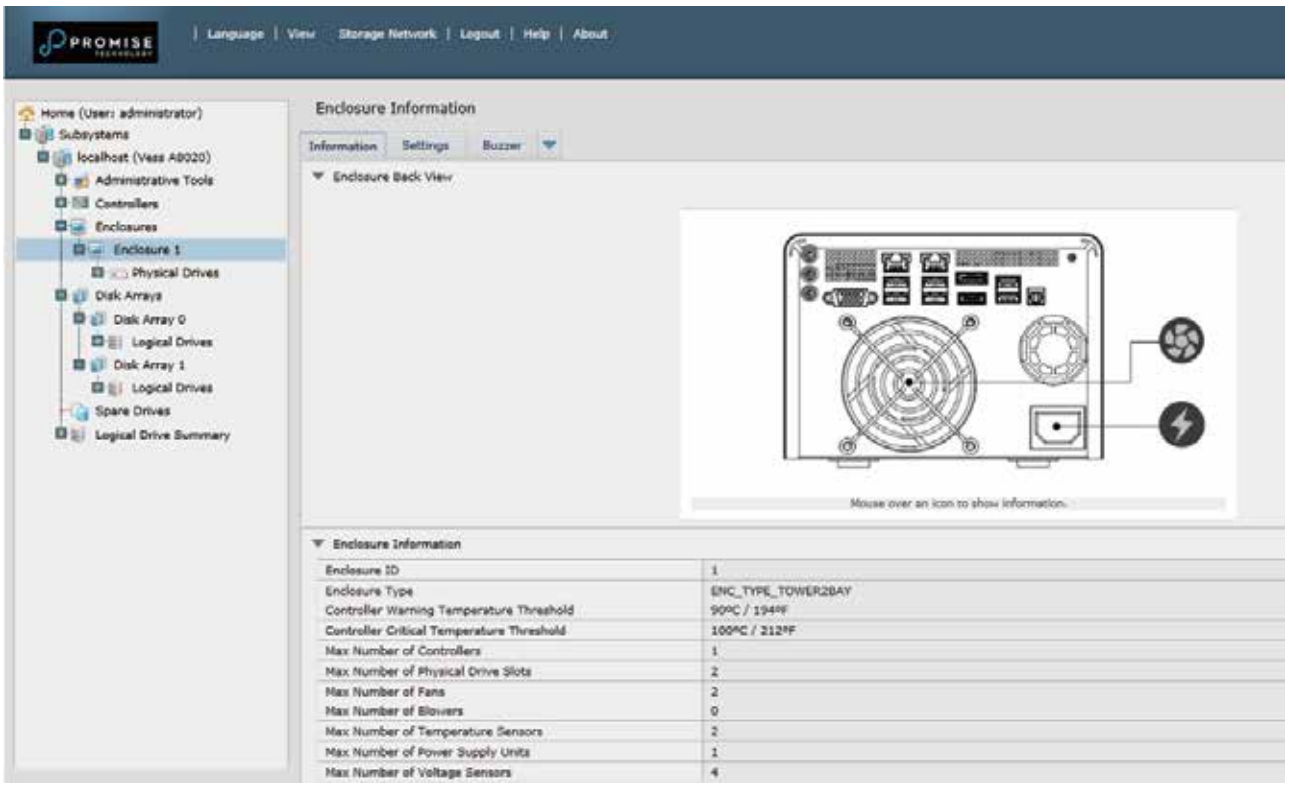


With OPAS, the process is greatly simplified. If there is any sort of issue with the system the user can simply plug in a USB memory stick to the PROMISE Vess NVR or storage and the system report will be automatically retrieved. This is a handy feature if the systems are located in facilities with tight security restrictions on outside personnel, like in a bank. OPAS also greatly speeds up the process so the root cause can be identified more quickly and the issue can be resolved.

WebPAM

The Web-Based PROMISE Array Management Web (WebPAM) software is an application designed specifically for monitoring and managing PROMISE Technology RAID products, in particular Vess A8020.

WebPAM uses Web-Based Enterprise Management (WBEM) technology to run over a local area network or the internet to make possible secure RAID monitoring and management from any computer, using a standard Internet browser. This allows you to monitor your RAIDs from virtually any location and to take care of them over your network



NetworkOptix Witness VMS

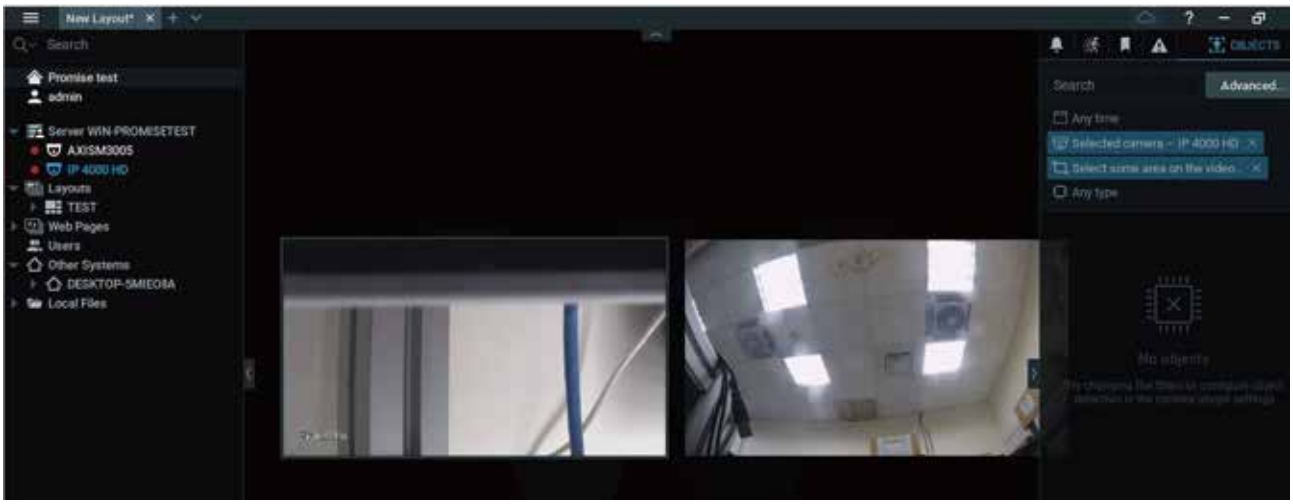
Nx Witness VMS is a lightning fast, easy to use, cross-platform IP video management system (VMS) / video surveillance software designed to discover, view, record, and manage IP video cameras so you can monitor, analyze and react to critical events in real time.

Key Features of Nx Witness VMS 5.0

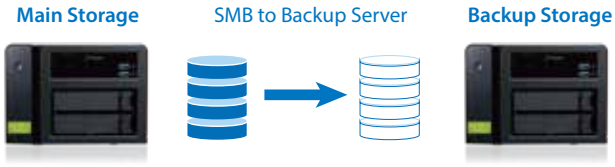
- **Advanced Object Search**
  Advanced Object Search is to search for objects identified by analytics and stored in video archives by attributes (e.g. object type, color, gender, age, clothing, etc) in a new pop-out window.
- **Metadata Driven Archive Backup Options**
  Archive backups can now be configured to allow backup of recorded video archives based on associated system metadata – including motion, bookmarks, or objects.
- **Web Page Proxy via Servers**
  Local device can be proxied via the Server application and viewed via a remote secured connection. This allows for easy, secure access to integrated security products / devices as well as management of underlying IT infrastructure and related services.
- **Two Factor Authentication (2FA)**
  Cloud connected systems can now utilize 2 factor authentication. This is a system wide setting and forces all users with Cloud accounts to use an authentication app to verify their identity before logging in to a System.
- **Resource Grouping**
  Operators can now group resources (cameras, streams, encoders, web pages) in Nx Desktop which can be used in roles and permissions.
- **Audio Mapping**
  Operators can use audio capabilities from different devices together.
- **Desktop Client Automatic Updates**
  Nx Desktop client is no longer tied to the Nx Server or Nx Cloud applications when updating to a later version.
- **Encrypted Archives**
  Recorded video archives will be encrypted and viewable only in the Desktop, Mobile, and Web clients, works on any hard drive or storage medium. System owner creates the encryption key.
- **Server Location ID for Failover**
  Allows System Administrators to assign a Location ID to Servers in multi-Server WAN-based Systems. This allows defining a Server or pool of Servers that are physically located near the affected cameras as failover Servers to prevent failover to remote Servers which could result in frame dropping over weaker network connections.
- **Server Web Admin Interface Redesign**
  Allow administrators to add and remove users, as well as view detailed information about Servers, Cameras, and Licenses.
- **Video Preview Thumbnails**
  In Windows and MacOS Desktop clients users can now hover over the timeline to preview video in thumbnail format.
- **More Secured Connections**
  All VMS Server connections use SSL/TLS Certificate pinning to render man-in-the-middle attacks impossible. VMS Servers and Clients also use new session-based authentication by default.

Vess A8020 and Nx Witness VMS 5.0 setup and configurations

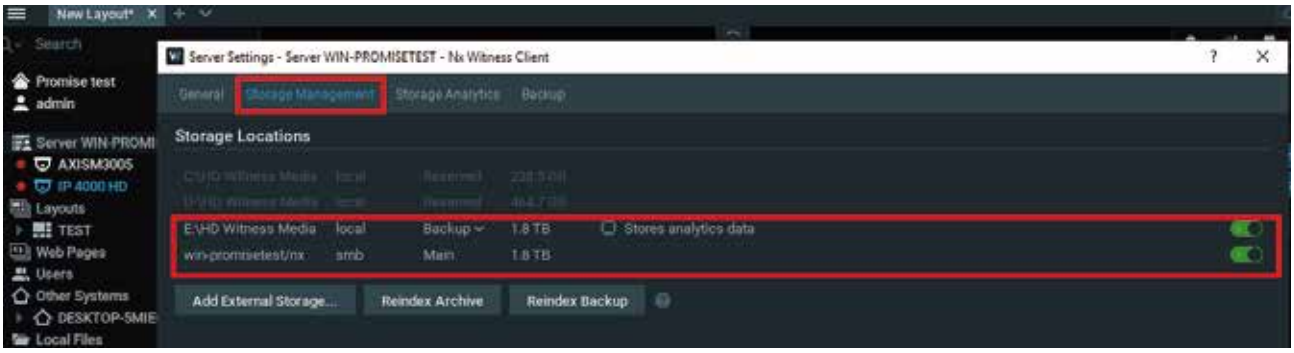
First, we will need to setup server in the Nx Witness VMS 5.0 and make sure camera configuration (add recording cameras)



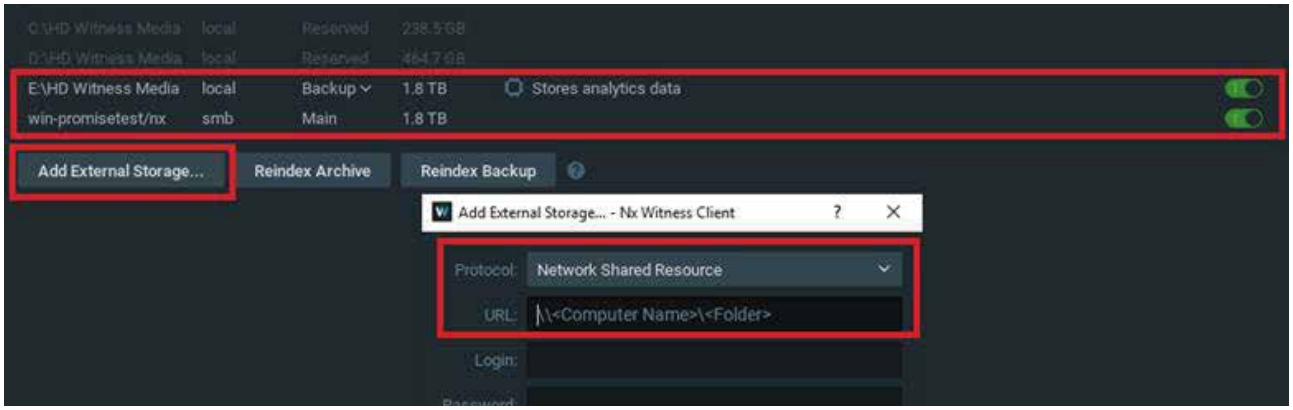
Nx Witness provides a simple way to manage storage in a System. Each Media Server can use multiple local and network storage. If more than one storage location is used the Nx Witness Media Server will automatically balance space consumption across drives. Usage intensity is strictly related to storage availability.



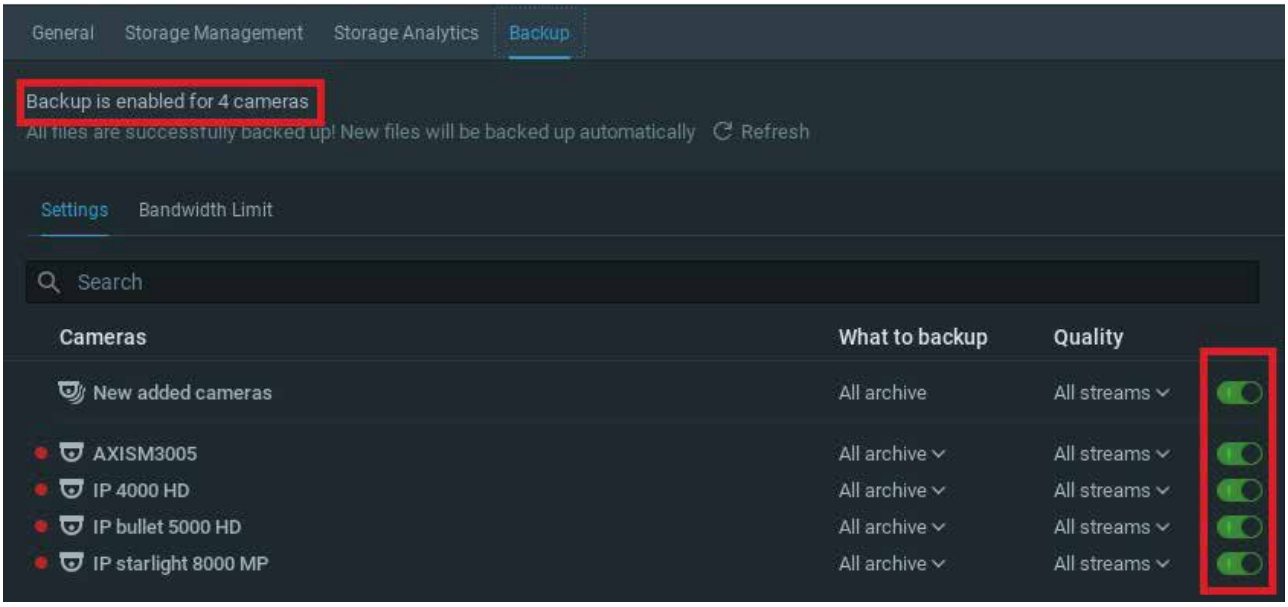
To Configure/Modify Local HDDs:
Right click on a Server in the Resource Panel and choose Server Settings.
Make sure any storage locations you'd like to use are checked.



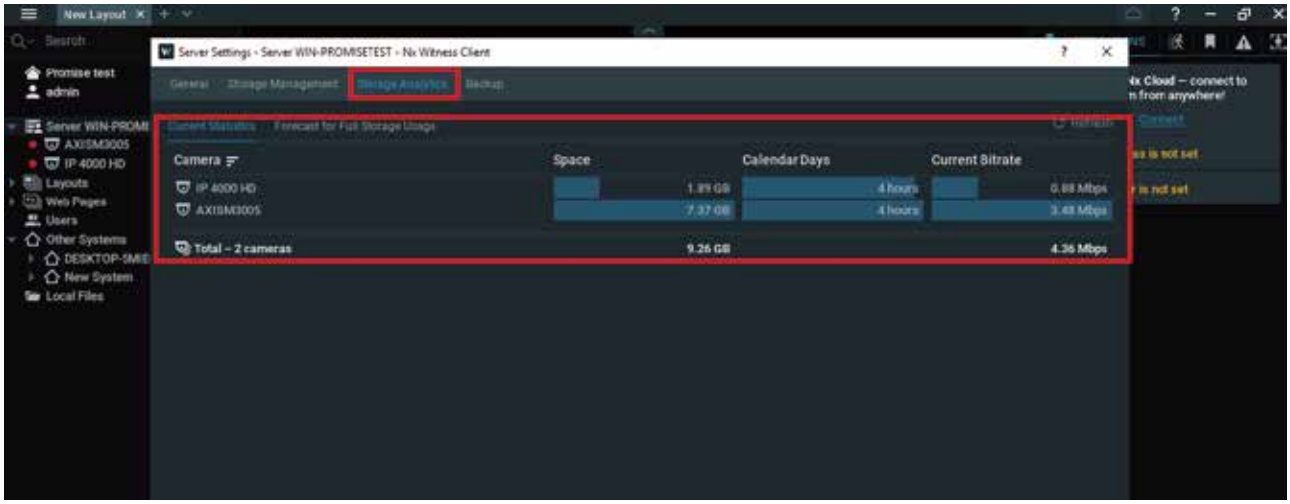
Configure and assign second storage unit with NAS SMB



Once is enabled, use it as a Backup storage once the Main is full.

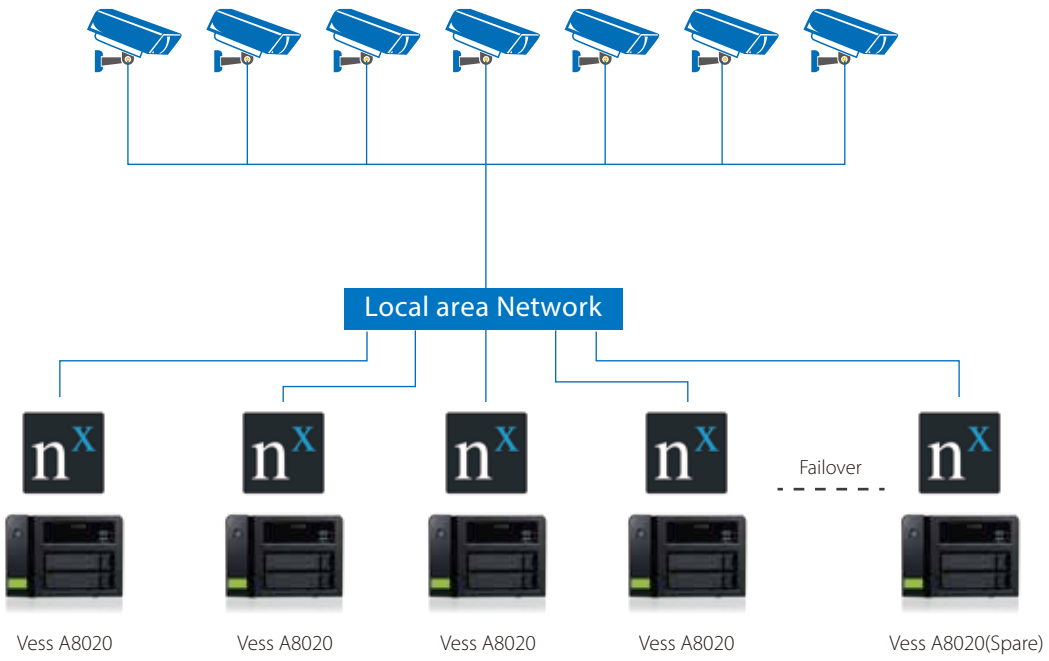


After storage assigned, we can check Storage Analytics to make sure we have enough Space available for period of time, while using certain amount of cameras, current bitrate and Calendar days it will be enough to run cameras

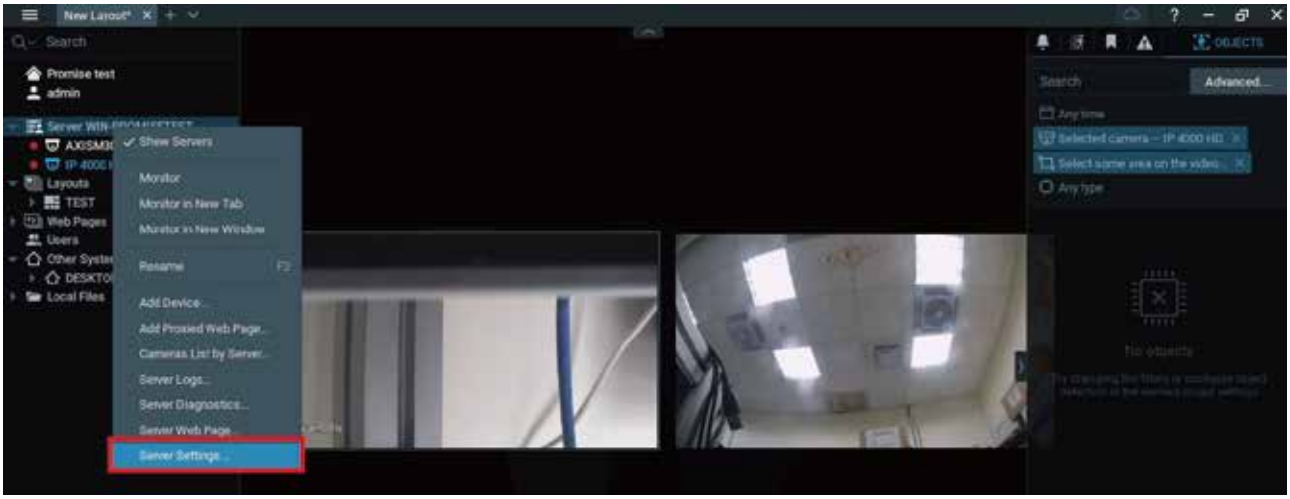


Storage Monitor can be added to check the status of the CPU, RAM, etc to prevent unnecessary overload and/or frame loss:

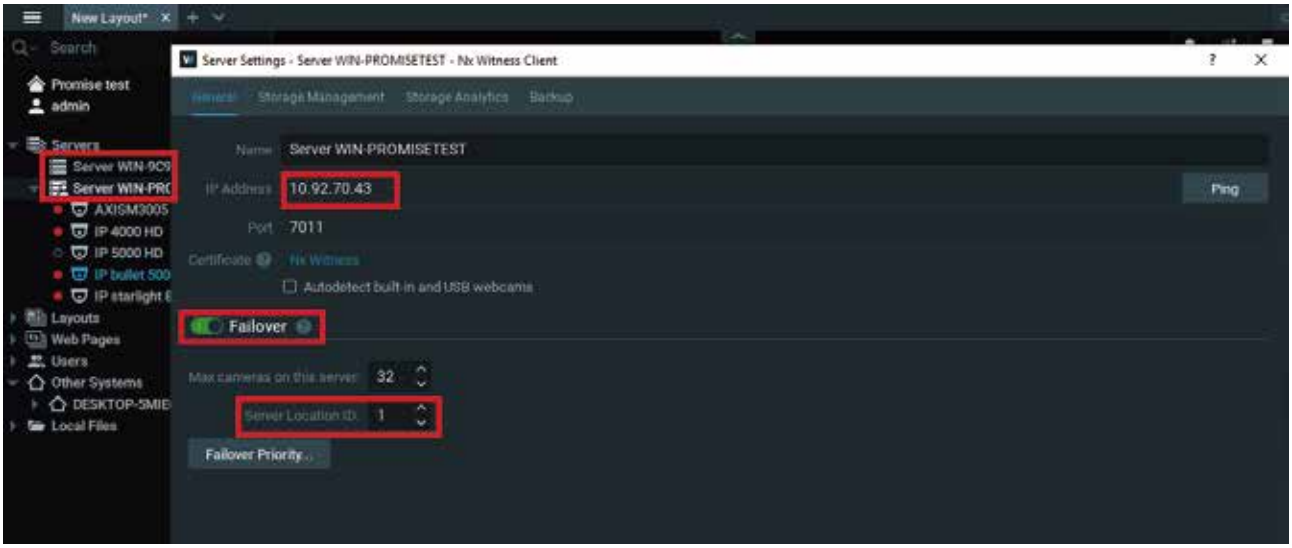
Failover is for high-availability with Nx solution, it allows defining a Server or pool of Servers that are physically located near as failover Servers to prevent failover to remote Servers which could result in frame dropping over weaker network connections. We will need to add another server into Nx 5.0.



Setup failover function by click Server Settings



Allows System Administrators to assign a Location ID to Servers in multi-Server WAN-based Systems, thus Server location ID has to be the same for both Servers and only in this case it will allow us to use Failover, once setup correctly it will light up with green color.



Advanced Object Search is to search for objects identified by analytics and stored in video archives by attributes (e.g. object type, color, gender, age, clothing, etc) in a new pop-out window.

Conclusion

Vess A8020 is the best compact NVR for ATM/Banking/Luxury shops/SMB facilities, and not only, can easily support 16 full HD IP cameras featuring Intel 9th generation CPU, PROMISE RAID and SMARTBOOST™ Technologies in a combination with Nx VMS that is an easy to use, lightweight, featuring us for a reliable and stable solution.

Technical Specifications

Model	Vess A8020

General Information

Camera Range[1]	16
Form Factor	Tower Base
Number Of Drives	2 Drives (3.5")
Drive Type	6Gbs SATA @ 3.5”
# of Controllers	Single
System Processor	Intel Core i3-9100E[2]
System Memory	8GB Default (Max 32GB)
Network Interface	2x Gigabit Ethernet
Internal Storage (M.2)	128GB
Storage Expansion	Optional PROMISE Vess R/J series via iSCSI
iAMT Support	YES

Other Interfaces

# of USB Ports	Front: 2x USB 3.0, Back: 4x USB 3.0, 2x USB 2.0
Graphics	1x D-sub VGA, 1x HDMI, 1x DP port
Optical S/PDIF	YES
Audio I/O	3x 3.5mm Audio Jack

RAID Operational Feature

RAID Levels	0, 1
Max. LUNs per System/Array	16/2

Software

OS Supported (64-bit)	Windows 10, WSS2019[3]
Management Tools	Graphical UI/SNMP via Ethernet, CLI/CLU via Ethernet or Graphics, OPAS Service via USB, iAMT, SDK or API for Integration
Appliance Mode	Surveillance Optimization @ Arrays in Normal and Degrade
Event Notification	Email, SNMP, Buzzer, LEDs

System Information

AC Input	100 ~ 240V AC, 60 ~ 50Hz
Current (Maximum)	2A
Power Supply	250W Single ATX
Temperature	10° ~ 35°C (-40° ~ 70°C non-operational)
Dimensions (H x W x D)	130 x 185 x 245.2 mm
Weight	System W/ HDD: 4.86 kg

Warranty and Support

Warranty	3 year limited warranty
Optional Accessories	8/16GB DDR Memory

1.The ideal camera range were the test output with fully populated enclosure and 8GB memory under 25FPS, H.264, 5Mbps Bitrate and 1080P resolution
2.The final spec may be various without further notice, please check with PROMISE website for the latest information
3.CPU/OS can be optionally upgraded for project based.

PROMISE TECHNOLOGY

PROMISE TAIWAN
Hsinchu, Taiwan
sales@tw.promise.com

PROMISE EUROPE
Eindhoven, The Netherlands
sales@eu.promise.com

PROMISE MEA
Dubai, UAE
sales@mea.promise.com

PROMISE CHINA
Beijing, China
sales@cn.promise.com

PROMISE UNITED STATES
Newark, CA, USA
sales@promise.com

PROMISE GERMANY
Dortmund, Germany
sales-de@eu.promise.com

PROMISE INDIA
Mumbai, India
sales@in.promise.com

PROMISE JAPAN
Tokyo, Japan
sales@jp.promise.com

Contact us

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