PROMISE® TECHNOLOGY, INC.

Vess

A2200 Series

Architectural & Engineering Specifications

For Video Surveillance

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RAID Storage Appliance for Midsize to Large Range Video Surveillance Installations

1. General Information

1.1 Vess A2200 Series

a. The system shall be a high performance, massively scalable IP recording appliance system designed to provide 24/7, 365 enterprise-class availability to video surveillance application.

b. The system shall be powered by next-generation processing power from Intel, the 2nd Gen Intel® Core™ i3-3225 @ 3.30GHz Dual-core processor or Intel® Xeon® Processor E3-1245V2 @ 3.4GHz Quad-core processor or any other processor models within Intel Ivy Bridge family http://ark.intel.com/products/codename/29902/Ivy-Bridge that meets the needs of today's high demanding video streaming workloads.

c. The system shall support the Intel® HD Graphics 4000/P4000 engine that is by default integrated right on the 2nd Gen Intel® Core™ i3 and Intel® Xeon® processor.

d. The system shall be a standard 19" 2U rack mount chassis with 6 disk drives support (3.5"), and the enclosure depth shall be no more than 450 mm to fit with security deployment that is short of space.

e. The system shall come with native RAID redundancy support that provides comprehensive options including 0, 1, 3, 5, 6, 10 (0+1), 30, and 50 levels for easy configurations.

f. The system shall provide 4 ports of Gigabit Ethernet support for networked devices access to record, playback, and archive surveillance video.

g. The system shall provide both D-sub VGA and HDMI interfaces support for surveillance video display in an event with live view, search or playback purpose.

h. The system shall come equipped with audio jack support that provides real-time, low latency audio input and output connections allowing the system to import or export audio signals from or to other outside devices.

i. The system shall include 2 ports of serial interface support to allow user to perform system management tasks.

j. The system shall be designed with 2 ports of USB2.0 and 4 ports of USB3.0 connectivity in supporting either a simple USB stick plug-in for service troubleshooting or connect with other computer peripherals for operations.   For the troubleshoot, the USB is used to help reduce maintenance complexity and streamline an easier tech

support workflow. With a generic USB stick plugging in, it performs system information retrieval, firmware auto upgrading, script for quick installation and password resetting.

k. The system shall provide 1x 16-lane Gen 2.0 PCIe and 2x 8-lane Gen 2.0 PCIe slots for external adapter connections.

l. The system shall come with the terminal I/O board that enables 8 coupler sensor input and 8 coupler mechanical relay alarm output (insulated from main unit).

m. The system shall be easily configured as iSCSI initiator and comply with iSCSI protocol standard that can support multiple iSCSI target storage devices for capacity expansion.

n. The system shall come with 8GB memory by default and can support up to 16GB memory for data cache.

o. The system shall provide a hot-swappable double fan module design for easy replacement when required.

2 RAID Operational Features

2.1 Vess A2200 Series

a. The system shall deliver comprehensive RAID levels protection options flexible for easy configurations while deploying it with Windows or Linux based video management software (VMS) on top to handle video feeds from networked cameras.

b. The RAID level options include 0, 1, 3, 5, 6, 10 (0+1), 30, and 50.

c. RAID level 5 allows no more than one disk drive failure per logical drive group, and RAID 6 allows two drives failure per group.

d. The system shall provide global or dedicated hot spares function with revertible option that can be assigned to a single drive or a complete RAID set in hopes to recover lost video in time when any of the drives fails.

e. The system shall continue to work without interfering with the video streaming or losing video frames during a RAID array is at the critical, degrade, or rebuild stage.

f. The system shall offer a maximum number of Logical Unit Number (LUN) up to 256 per subsystem and 32 per array.

g. The system shall feature selectable block size options ranging from 64KB to 1MB, and a variable sector size configuration with 512B, 1KB, 2KB, and 4KB options.

3 Management Features

3.1 Operating Systems Compatibility

The system shall support standard operating systems environments that can be used to

run Windows or Linux based video management software (VMS) on top to handle video feeds. These include:

Operating Systems	Type
Microsoft Windows Embedded Standard 7 (WS7P) Service Pack 1	64 bits
Microsoft Windows Server 2008 R2 Standard Service Pack 1	64 bits
CentOS 6.3	64 bits
Ubuntu 12.04 Server	64 bits
RHEL 6.1	32 bits
Fedora Core 14	32 bits

3.2 Management Tools

a. The system shall provide a friendly graphical user interface tool with highly secured communications protocol protection (SSL) to ensure end-to-end data transit and help encrypting information and providing authentication login over management network.

b. The user interface should deliver an intuitive and easy-to-use message to the users with comprehensive system information, administrative tools, array configuration, and enclosure status for management of the RAID storage appliance platform.

c. The system shall offer SNMP management protocol support to monitor system conditions that warrant administrative attention.

d. The system shall include command-line interface (CLI) support over either a serial console port or RJ-45 Gigabit Ethernet management port to perform system management tasks.

e. The system shall be able to send email alerts to report hardware, software, enclosure or disk array errors while operating.

f. The system shall be designed with USB connectivity capability in supporting a simple USB stick plugging in to eliminate the need of establishing interconnected components to the system for troubleshooting.   The USB feature is designed to reduce maintenance complexity and streamline an easier tech support workflow.   It performs system information retrieval, firmware auto upgrading, script for quick installation and password resetting.

g. The system shall support the Milestone XProtect plug-in which allows users to manage A2200 series via the management user interface of XProtect. The PROMISE WebPAM ProE management GUI is embedded in the Milestone XProtect application environment and runs as an integrated part of the software and its client applications.

3.3 Management Interfaces and Protocols

a. The system shall support various protocol standards commonly used for management which may include SNMP, and SSL/TLS.
b. The system shall provide Ethernet (GUI/CLI) and USB connections support for system management.

3.4 Event Notification

The system shall include multiple alerting features through email, SNMP, Buzzer, or LEDs to report system health, pre-defined threshold or unexpected failures in an automated fashion.

4 System Architecture

4.1 Mechanical Specification

a. The system shall come with advanced hardware design using 80PLUS-certified power supplies that can help greatly improve power effectiveness and reduce heat generation from the system.
b. The operating temperature of the system ranges from 5 to 40°C.
c. The operating humidity of the system ranges from 10% to 80% (non-condensing).
d. The system shall support standard 19" rack housing installation and the enclosure depth shall be no more than 450 mm to fit with security deployments that are short of space.

4.2 Environmental Directives & Requirements

a. The system shall conform to the standard EMC/Safety requirements that meet generic radio interference criteria defined for electrical hardware equipment. These shall include CE (EEA), FCC Class A (USA), VCCI (Japan), BSMI (Taiwan), CB Report, KC (Korea), C-Tick (Australia), UL/cUL (USA/Canada), CCC (China).
b. The system shall be ROHS, WEEE, ISO14001 and REACH compliant, and all the components used within the system shall eliminate the adoption of hazardous materials like Pb, Cd, Br, and Halogens at all levels.

About PROMISE Technology, Inc.

PROMISE Technology brings more than 24 years of design and manufacturing experience of sophisticated RAID solutions to the video surveillance market.   Small, medium and large scale deployments benefit from the profound technical knowledge and dedication that comes with every installation. .   Whatever your surveillance requirements, Promise has a solution.   Whether you need easy to install, low maintenance recording appliances for small scale installations, simple, reliable, value priced professional network recording appliances with NAS, DAS or SAN solutions for medium sized deployments, or enterprise level network recording appliance and external storage combination for large scale demanding environments, Promise delivers.   For surveillance integrators and installers, Promise provides an umbrella solution for video data management to meet all your video surveillance needs. For more information, visit PROMISE Technology's website at www.PROMISE.com