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ApplianceStor 75

Performance Storage Server

User Manual

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About This Manual

Conventions

To make sure that you perform certain tasks properly, take note of the following symbols used throughout this manual.

	Warning:	Provides Information to prevent injury in the process of completing a task.
	Caution:	Provides Information to prevent damage to the components in the process of completing a task.
	Important:	Provides Information required for completing a task.
	Note:	Provides Tips to aid in completing a task.

Safety Symbols

The following symbols are placed on some components of the system to alert the user to potential hazards,

	WARNING: Electric Shock Hazard – To reduce risk of injury from electric shock hazards, do not open this component.
	WARNING: Contains No User or Field Serviceable Parts – To reduce the risk of injury from electric shock hazards, do not open this component.
	WARNING: Hot Surface or Component - To reduce risk of injury from a hot component; allow the surface to cool before touching.
	WARNING: Insert Network Interface Only - Any receptacle (e.g. RJ45) marked with this symbol indicates a network interface connection. To reduce the risk of electric shock, fire or damage to equipment, do not plug telephone or telecommunications connectors into this receptacle
	WARNING: This symbol, on power supplies or systems, indicates that the equipment is supplied by multiple sources of power. To reduce the risk of injury from electric shock, remove all power cords to completely power down the system.
Weight in kg Weight in lb	**WARNING:** This symbol indicates that the component exceeds the recommended weight for one individual to handle safely. To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Safety Precautions

Technician Notes

- Only authorized technicians should attempt to repair this equipment.
- Before installing this system, carefully read all the manuals included with the system.
- All repair procedures allow only module replacement. Because of the complexity of the individual boards and sub-assemblies, no one should attempt to make repairs at the component level or make modifications to any printed wiring board. Improper repairs can create a safety hazard.
- To reduce the risk of personal injury from electric shock and hazardous energy levels, do not exceed the level of repairs specified in these procedures.
- The system is designed to be electrically grounded. To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

Electrostatic Discharge Precautions

- Electrostatic discharge (ESD) can damage static sensitive devices or micro circuitry. Proper packaging and grounding techniques are required to prevent damage.
- Keep electrostatic-sensitive parts in their containers until they arrive at a static free work area.
- Use a wrist strap connected to the work surface as well as properly grounded tools and equipment
- Keep the area free of nonconductive materials such as ordinary plastic tools and foam packing.
- Avoid touching pins, leads, or circuitry.
- Always place drives with printed circuit board (PCB) assembly-side down.
- Grasp cards and boards by the edges. Hold drives by the frame. Avoid touching the solder joints or pins.
- If you need to lay the device down while it is out of the antistatic bag, lay it on the antistatic bag. Before picking it up again, touch the antistatic bag and the metal frame of the system unit at the same time.

System Warnings

- Avoid dust, humidity, and extreme temperatures; place the system on a stable surface.
- To reduce the risk of personal injury from hot surfaces, allow the hot-plug disk modules and other system modules to cool before touching them.

- To reduce the risk of electric shock or damage to the equipment, do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Ensure the power cord is inserted into a grounded electrical outlet that is easily accessible at all times. Unplug the power cord from the power supply module to shut off power to the equipment
- Protect the storage system from power fluctuations and temporary power interruptions with a regulating uninterruptible power supply (UPS). This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system operational during a power failure.
- The storage system must always be operated with all hot plug modules installed or slot covers in place to ensure proper cooling.
- Route power cords so that they will not be walked on or pinched by items placed upon or against them. Pay particular attention to the plug, electrical outlet, and the point where the cords exit from the product.

Regulatory and Integration Information

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, this system is assigned a serial number. This system serial number can be found on the product label, along with the required approval markings and information. When requesting certification information for this product, always refer to this serial number. This serial number should not be confused with the marketing name or model number.

Product Regulatory Compliance

Product Safety Compliance

Worldwide Safety approvals can be supplied upon request. Please contact your sales representative for approvals.

Product EMC Compliance

This product has been assembled from components that comply with the following electromagnetic compatibility (EMC) regulations.

Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (for example, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device, as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class A devices do not have an FCC logo or FCC ID on the label. Class B devices have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been assembled with components that comply with the limits for a Class A

digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Declaration of Conformity for Products Marked with the FCC Logo—United States Only
This device complies with Part 15 of the FCC Rules Operation and is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. For questions regarding your product, please contact your sales representative.
To identify this product, refer to the Part, Series, or Model number found on the product.

European Union Notice
Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low-Voltage Directive (73/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms (items in brackets are the equivalent international standards):

Table i   European Union Safety Requirements

EN55022 (CISPR 22)	Electromagnetic Interference
EN55024 (IEC61000-4-2,3,4,5,6,8,11)	Electromagnetic Immunity
EN61000-3-2 (IEC61000-3-2)	Power Line Harmonics
EN61000-3-3 (IEC61000-3-3)	Power Line Flicker
EN60950 (IEC950)	Product Safety

Power Cords

The power cord set included in the system meets the requirements for use in the country where the system was purchased. If this system is to be used in another country, contact your sales representative to purchase a power cord that is approved for use in that country.

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the cross-sectional area of the wires must be a minimum of 1.00mm² or 18AWG, and the length of the cords must be between 1.8m (6 feet) and 3.6m (12 feet). If you have questions about the type of power cord to use, contact your sales representative.

Chapter 1
Introduction

Audience Assumptions

About This Guide

Packing Checklist

Specifications

System Overview

1 Introduction

1.1 Audience Assumptions

This manual assumes that you are a service technician or network administrator familiar with computer hardware, data storage and network administration terminology and tasks.

1.2 About this Guide

AS75 comes with appropriate hardware installed. User only needs to configure IP addresses, install appropriate VMS software to administer and view the cameras. This manual is generally organized as follows:

Table 1-1   Introduction of the Manual

Introduction	General introduction to the AS75 and its components.

1.3 Packing Checklist

Make sure you have all the components shipped with your system. If any item is damaged or missing, please contact your sales representative for replacement. The AS75 is shipped with the following:

Table 1-2   Packing Checklist

Chassis	1U Enclosure
Hard Disk Drives	Up to four depending upon configuration
Power Cords	Two Power Cords
Keyboard and Mouse	Depending upon configuration

1.4 Specifications

The table below is the technical specification for the AS75.

Table 1-3   Specifications

Dimensions	Height: 1.7" / 43.5mm Width: 16.9" / 430mm Depth: 26" / 660mm
Weight	Max-weight: 42 lbs / 19 kg ±5%
Temperature	Operating System: +10ºC~+35ºC Non-operating System: -40ºC~+70ºC
Humidity	Operating System: 20%~80% Non-operating System: 10%~95%
Power	➢ 100--240Vac input, 50/60Hz ➢ 650 watts
Current	➢ Typical - 6.5 /2.7A max 8.6A

1.5 System Overview

The ApplianceStor75 Rack mount integrates VMS (Video Management Software) and storage into a simple to use, high performance video surveillance storage server solution. This eliminates the cost of a separate VMS server, significantly reducing cabling as well as the nightmare of integrating VMS, OS, commodity server and storage. We guarantee performance with all major VMS solutions prequalified on the AS75R. It is easy to install and maintain

Figure 1-1: AS75

1.6 Powerful

The AS75R is a powerful server and storage system, built around dual high performance Intel® Xeon® E5-2620v4 eight core processors with 2.1 GHz clock speeds and 16 GB DDR4 2133 MHz

ECC memory. The AS75R offers high performance and bandwidth connectivity to meet the requirements of the most demanding megapixel camera applications. The AS75R has unmatched LAN connectivity with four GbE ports and an additional port that is dedicated to management for a total of five GbE LAN ports. With the AS75R video surveillance appliance's flexible LAN connectivity and its impressive power, it can meet the requirements of the most demanding megapixel camera applications.

1.7 Reliable

Disk drive failure is the number one cause of lost video storage and downtime. We offer advanced RAID 5 technologies which eliminates the loss of video due to a disk failure. Disk drives are hot swappable without interruption in service or loss of data. The AS75R only uses ECC RAM and guarantees that video being stored, read, and moved within is always correct. It uses a parity bit to accomplish the data protection. Most NVRs and DVRs are not protected to this level and with these products crucial video can be lost. The AS75R gives peace of mind that the video is always reliably stored.

1.8 Right Size

Designed for smaller megapixel deployments; it is offered in 8, 12, 16, 24, 32, and 40 TB versions with standard 2x120GB SSD OS drives in RAID 1. The AS75R matches the perfect storage capacity with exceptional performance to ensure optimal, cost effective, and dependable video storage. If expansions are required, the AS75R can be used in conjunction with the PS5000, allowing capacity to grow up 1080 TB.

1.9 SSD Drives

SSD drives are designed to deliver reliable 24×7 operation and optimized for power consumption, quiet operation, and video. This ensures the highest video storage performance, with enterprise-class reliability and a significant system cost savings.

1.10 Optimized

Designed and optimized for the video surveillance market. It delivers the performance required for the most demanding megapixel installations.

1.11 Open

Purpose built open platformto integrate Video Management Software. We have prequalified all major supported OS and VMS providers. We continually add more to ensure the widest possible certification coverage.

1.12 Video Surveillance Class

Video Surveillance class drives are designed for video storage to deliver reliable 24x7 operations and optimized for low-power consumption, quiet operation, smooth video streaming, high reliability and high capacity. Ensuring the highest video storage performance, enterprise-class reliability and availability in an efficient solution.

1.13 Viewing and Monitoring

The AS75R ships standard with HD graphics, delivering HD viewing capability while eliminating the complexity and cost for a separate video viewing and monitoring server.

1.14 Upgradable

Additional RAM can be added, allowing up to 64GB RAM to be used.

1.15 Easy

The AS75R delivers effortless installation, management and administration. All administration functions assume technicians have basic to no storage knowledge. Once installed in a rack, setup time should be 15 minutes or less.

1.16 Hot-swappable

The AS75R features four 3.5" hot-swappable SATA drives and power supplies for easy installation and maintenance.

1.17 Manageable

Very easy to manage with optional remote management. Web-based, GUI-driven iKVM upgrade kit provides full control of server functions with dedicated hotkeys and remote server screen. Virtual media-over-LAN helps share local devices with target servers, enabling fast troubleshooting.

1.18 System Specification

Core Technology	
CPU Type	Dual Intel Xeon E5-2620 v4 Broadwell (2.1Ghz)
Socket	2 x Socket LGA2011-3
Core Logic	Intel® C612 PCH Chipset
Bench Mark/Clock speed	19377/2.1 GHz
Memory size	16GB (expandable up to 64GB)
Memory type	DDR4 2133 ECC RDIMM
Video Storage Performance	Up to 120Mbps /15MBps internal and 720Mbps / 90MBps with PS5000
Expansion	
Expansion Slot	1 (only available on the non-RAID recording server model)
Slot Type	1x PCI-E x16
Storage	
HDD Bays	4 x Hot-swap 3.5"
Drive support	2, 3, 4, 6, 8, and 10TB SATA III Video Class
	SSD for OS
RAID	5, 10
Removable Storage	1 x Slim-type Optical DVD-RW
Networking	
Data Ports	4 x GbE (Intel® I210AT)
Management	1 x GbE (Realtek RTL8211E)
Display Outputs	up to 4
Onboard Graphic	ASPEED AST2400 with 16MB VRAM
Optional HD Graphic	HD 7750 1 GB DDR3 plus mDP, 2x HDMI (DVI and VGA via adapters) (not available with all configurations)
Opt Graphic performance	1631
Max Supported Resolution	DVI - 1920x1200 @ 60Hz
	HDMI - 4096x2160 @ 24Hz
	mDP - 4096x2160 @ 60 Hz
I/O Ports	
	2 x USB 2.0 (front) and 2 x USB 3.0 (rear)
	1 x D-Sub (1x rear)
	1x Serial Port (rear)

Compliance	
Safety	US/Canada (UL1950-CSA950)
	Europe (CE, EN55022 compliance to EU Directive 89/366/EEC& TUV)
EMI	US (FCC , CFR47 Part 15, Class A)
	Europe (CE, EN55022 class A & EN55024)
	Australia (C-TICK), Taiwan (BSMI)
Physical Characteristics	
Dimensions (in./mm)	26" x 16.9" x 1.7" / 660 x 430 x 43.5
Weight	42lbs./19Kg26" x 16.9" x 1.7" / 660 x 430 x 43.5
Power	Dual redundant 1+142lbs./19Kg
Voltage	100 - 240 V_{AC}Dual redundant 1+1
Watts	650 W 80 PLUS Gold100 - 240 V_{AC}
Operating Environment	Designed for 24x7x365
Operating temperature	10℃ ~ 35℃
Non operating temperature	-40℃ ~ 70℃
Humidity	20% ~ 90% (Non condensing)
Operating altitude	0 to 10,000'/0 to 3000m 20% ~ 90%

Chapter 2
AS75 Component Identification

2 Component Identification;

2.1 Motherboard rear I/O

Following diagram shows the location of all the rear I/O modules on AS75 motherboard.

Figure 2-1:AS75 Motherboard Rear I/O
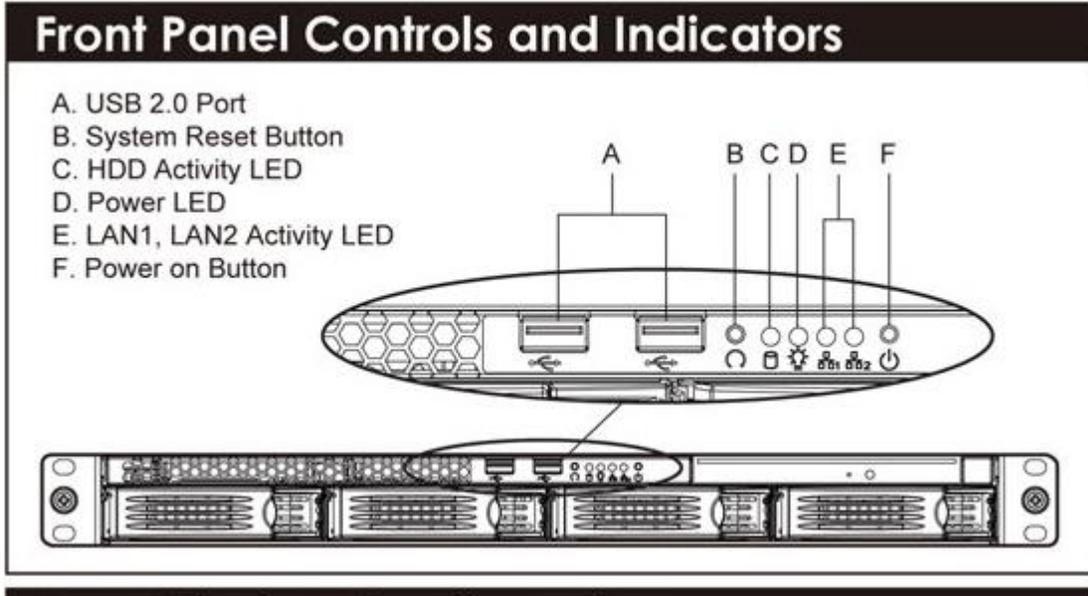
2.2 Front I/O

AS75 Front I/O are as shown below:

Front Panel Controls and Indicators

A. USB 2.0 Port
B. System Reset Button
C. HDD Activity LED
D. Power LED
E. LAN1, LAN2 Activity LED
F. Power on Button

Figure 2-2: AS75 Front I/O

2.3 Power Supply

Power supply is located in the rear of the case. The switch and power plug is shown in the figure below: