Site Installation Guide

HGST Active Archive System SA-7000

September 2015

1ET0057

Revision 1.1

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Contents

List of Figures

List of Tables

1 Document Summary

Topics:

The following chapter defines the *scope*, *intended audience*, and *references* related to the Active Archive System Packing Specifications Document.

1.1 Scope

The following document provides the site specific shipping and delivery requirements for the Active Archive System.

1.2 Intended Audience

The intended audience for this document are those persons who will be handling the process of shipping and delivery of the Active Archive System. The following document contains important information that is necessary to ensure the persons delivering the system are not injured and do not cause any damage to the system during transit and devilry to the data center.

1.3 References

- *Site Survey*
- *Site Requirements Document*
- *Installation Guide*

2 For More Information

Topics:

This chapter provides points of contact for the Active Archive System.

2.1 Points of Contact

For further assistance with the Active Archive System, contact Elastic Storage Platforms support. Please be prepared to provide the following information: serial number (S/N), product name, model number, and a brief description of the issue.

Telephone:

Region	Telephone Numbers	Support Hours and Additional Information
United States/International	1-408-717-7766	24 hours a day, 7 days a week
North America	1-844-717-7766	24 hours a day, 7 days a week Toll-free

Email:
support@hgst.com

Website:
www.hgst.com/support

3 Product Overview

Topics:

This chapter provides a product overview of the Active Archive System.

3.1 Introduction

The Active Archive System is a unit that is vertically integrated with object storage software, networking, servers and storage in an industry standard 42U rack.

The Active Archive System is comprised of the following major components, all of which have a number of replaceable units:

- Storage Interconnect
- Controller Nodes
- Storage Nodes
- Storage Interconnect
- Power Distribution Units (PDUs)
- Storage Enclosure Basic Storage Arrays

Note: In addition to the major components, the system includes the rack, cables, rack panels, hardware, labels, power cords, and sleds.

4 Disclaimers

Topics:

The following chapter describes the Regulatory Statement of Compliance and Safety Compliance for the Active Archive System.

4.1 Regulatory Statement of Compliance

Product Name: **Active Archive System**
Regulatory Model: **SA-7000 series**
EMC Emissions: **Class A**

This product has been tested and evaluated as Information Technology Equipment (ITE) at accredited third-party laboratories for all safety, emissions and immunity testing required for the countries and regions where the product is marketed and sold. The product has been verified as compliant with the latest applicable standards, regulations and directives for those regions/countries. The suitability of this product for other product categories other than ITE, may require further evaluation.

The product is labeled with a unique regulatory model and regulatory type that is printed on the label and affixed to every unit. The label will provide traceability to the regulatory approvals listed in this document. The document applies to any product that bears the regulatory model and type names including marketing names other than those listed in this document.

4.1.1 Restricted Access Location

The Active Archive System is intended for installation in a server room or computer room where at least one of the following conditions apply:

- access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the restrictions applied to the location and about any precautions that shall be taken and/or
- access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

4.1.2 Safety Compliance

The following table outlines how the Active Archive System is being designed to pass the product safety requirements:

Country/Region	Authority or Mark	Standard
Australia/New Zealand	CB report, CB certificate	AS/NZS 60950.1
Canada/North America	NRTL	CSA C22.22 No. 60950-1-07
Customs Union/Russia, Kazakhstan, Belarus, Armenia	EAC	TR CU 004/2011
European Union	CE	EN 60950-1
International		IEC60950, CB report and Certificate to include all country national deviations
United States/North America	NRTL	UL 60950-1
Mexico	NYCE or NOM	NOM-019-SCFI-1998

Country/Region	Authority or Mark	Standard
Brazil	INMETRO	IEC 60950-1
Taiwan	BSMI	CNS14336
Ukraine	UKrTEST or equivalent	4467-1:2005
Moldova	INSM	SM SR EN60950-1
Serbia	KVALITET	SRPS EN60950:2010
India	BIS	IS 13252 (Part 1):2010

Table 1: Product Safety Compliance

4.1.3 Electromagnetic Compatibility Agency Requirements

The following table outlines how the Active Archive System is being designed to comply with the Electromagnetic Compatibility (EMC) agency requirements:

Country/Region	Authority or Mark	Standard	Status
Australia/New Zealand	C-tick or A-tick	AS/NZS CISPR22	Complete
Canada/North America	Industry Canada	ICES-003	Complete
Customs Union/Russia, Kazakhstan, Belarus, Armenia	EAC	TR CU 020/2011	Complete
European Union	CE	EN55022, EN55024 including EN61000-3-2, EN61000-3-3	Complete
International		CISPR22, CISPR24	Complete
Japan	VCCI	V-3:2014	Complete
United States/North America	FCC	FCC Part 15	Complete
Taiwan	BSMI	CNS13438	Complete
Korea	MSIP	KN22, KN24	Complete
Ukraine	UKrTEST or equivalent	4467-1:2005	Complete
Serbia	KVALITET	CISPR22	Complete
Brazil	INMETRO		Complete

Table 2: Product EMC/Immunity Compliance

5 Safety and Regulatory

Topics:

The following chapter provides safety and regulatory information for the Active Archive System.

5.1 Optimizing Location

Failure to recognize the importance of optimally locating your product and failure to protect against electrostatic discharge (ESD) when handling your product can result in lowered system performance or system failure.

Do not position the unit in an environment that has extreme high temperatures or extreme low temperatures. Be aware of the proximity of the unit to heaters, radiators, and air conditioners. For more information on ambient operating conditions and environment, see: General Site Requirements on page 24.

Position the unit so that there is adequate space around it for proper cooling and ventilation. Consult the product documentation for spacing information.

Keep the unit away from direct strong magnetic fields, excessive dust, and electronic/electrical equipment that generate electrical noise.

5.2 Safety Warnings and Cautions

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all of the following safety instructions and information. The following safety symbols may be used throughout the documentation and may be marked on the product and / or the product packaging.

CAUTION Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.

WARNING Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.

Indicates potential hazard if indicated information is ignored.

Indicates shock hazards that result in serious injury or death if safety instructions are not followed.

Indicates do not touch fan blades, may result in injury.

Indicates disconnect all power sources before servicing.

5.3 Electrostatic Discharge

 **CAUTION**

Electrostatic discharge can harm delicate components inside HGST products.

Electrostatic discharge (ESD) is a discharge of stored static electricity that can damage equipment and impair electrical circuitry. It occurs when electronic components are improperly handled and can result in complete or intermittent failures

Wear an ESD wrist strap for installation, service and maintenance to prevent damage to components in the product. Ensure the antistatic wrist strap is attached to a chassis ground (any unpainted metal surface). If possible, keep one hand on the frame when you install or remove an ESD-sensitive part.

Before moving ESD-sensitive parts placed it in ESD static-protective bags until you are ready to install the part.

5.4 Rackmountable Systems

CAUTION

Always install rack rails and storage enclosure according to applicable product documentation. Follow all cautions, warnings, labels and instructions provided with the product and the rackmount instructions.

Reliable earthing of rack-mounted equipment should be maintained.

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Observe the maximum rated ambient temperature, which is specified in the product documentation.

Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

5.5 Power Connections

Be aware of the ampere limit on any power supply or extension cables being used. The total ampere rating being pulled on a circuit by all devices combined should not exceed 80% of the maximum limit for the circuit.

CAUTION The power outlet must be easily accessible close to the unit.

 Always use properly grounded, unmodified electrical outlets and cables. Ensure all outlets and cables are rated to supply the proper voltage and current.

 This unit has more than one power supply connection; both power cords must be removed from the power supplies to completely remove power from the unit. There is no switch or other disconnect device.

5.6 Power Cords

 Use only tested and approved power cords to connect to properly grounded power outlets or insulated sockets of the rack's internal power supply.

If an AC power cord was not provided with your product, purchase one that is approved for use in your country.

CAUTION To avoid electrical shock or fire, check the power cord(s) that will be used with the product as follows:

- The power cord must have an electrical rating that is greater than that of the electrical current rating marked on the product.
- Do not attempt to modify or use the AC power cord(s) if they are not the exact type required to fit into the grounded electrical outlets.
- The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground.
- The power supply cord(s) is / are the main disconnect device to AC power. The socket outlet(s) must be near the equipment and readily accessible for disconnection.

5.7 Safety and Service

 All maintenance and service actions appropriate to the end-users are described in the product documentation. All other servicing should be referred to a HGST-authorized service technician.

 To avoid shock hazard, turn off power to the unit by unplugging both power cords before servicing the unit. Use extreme caution around the chassis because potentially harmful voltages are present.

 When replacing a hot-plug power supply, unplug the power cord to the power s upply being replaced before removing it from the Storage Enclosure.

 The power supply in this product contains no user-serviceable parts. Do not open the power supply. Hazardous voltage, current and energy levels are present inside the power supply. Return to manufacturer for servicing.

 Use caution when accessing part of the product that are labeled as potential shock hazards, hazardous access to moving parts such as fan blades or caution labels.

6 HGST Regulatory Statements

Topics:

The following chapter provides regulatory statements for the Active Archive System.

HGST Storage Enclosures are marked to indicate compliance to various country and regional standards.

> **Note:** *Potential equipment damage:* Operation of this equipment with cables that are not properly shielded and not correctly grounded may cause interference to other electronic equipment and result in violation of Class A legal requirements. Changes or modifications to this equipment that are not expressly approved in advance by HGST will void the warranty. In addition, changes or modifications to this equipment might cause it to create harmful interference.

6.1 FCC Class A Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

> **Note:** This equipment has been tested and found to 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 it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Any modifications made to this device that are not approved by HGST may void the authority granted to the user by the FCC to operate equipment.

6.2 FCC Verification Statement (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

> **Note:** This equipment has been tested and found to 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 and can radiate radio frequency energy, and if not installed and used in accordance with the Active Archive System User Guide, it may cause harmful interference to radio communications.

6.3 ICES-003 (Canada)

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques”, NMB-003 édictée par le Ministre Canadian des Communications.

English translation of the notice previous:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Canadian Department of Communications.

6.4 CE Notices (European Union), Class A ITE

Marking by the symbol indicates compliance of this system to the applicable Council Directives of the European Union, including the EMC Directive (2004/108/EC) and the Low Voltage Directive (2006/95/EC). A “Declaration of Conformity” in accordance with the applicable directives has been made and is on file at HGST Europe.

6.5 Europe (CE Declaration of Conformity)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Canadian Department of Communications.

Cet appareil numérique respecte les limites bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: “Appareils Numériques”, NMB-003 édictée par le Ministre Canadian des Communications.

6.6 Japanese Compliance Statement, Class A ITE

The following Japanese compliance statement pertains to VCCI EMI regulations:

この装置は、クラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 ＶＣＣＩ－Ａ

English translation:

This is a Class A product based on the Technical Requirement of the Voluntary Control Council for Interference by Information Technology (VCCI). In a domestic environment, this product may cause radio interference, in which case the user may be required to take corrective actions.

6.7 Taiwan Warning Label Statement, Class A ITE

警告使用者:

此為甲類資訊技術設備，於居住環境中使用時，

可能會造成射頻擾動，在此種情況下，使用者會

被要求採取某些適當的對策。

English translation:

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take adequate measures.

6.8 KCC Notice (Republic of Korea Only), Class A ITE

기 종 별	사 용 자 안 내 문
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English translation:

Please note that this device has been approved for business purposes with regard to electromagnetic interference. If you find that this device is not suitable for your use, you may exchange it for a non-business device.

7 Packaging

Topics:

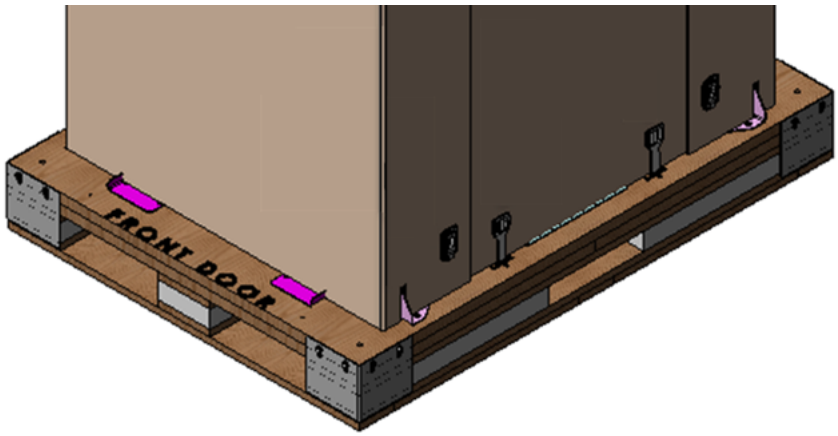
The following chapter provides an overview of the packaging design of the Active Archive System.

7.1 Packaging Overview

The following is an overview of the Active Archive System packaging design:

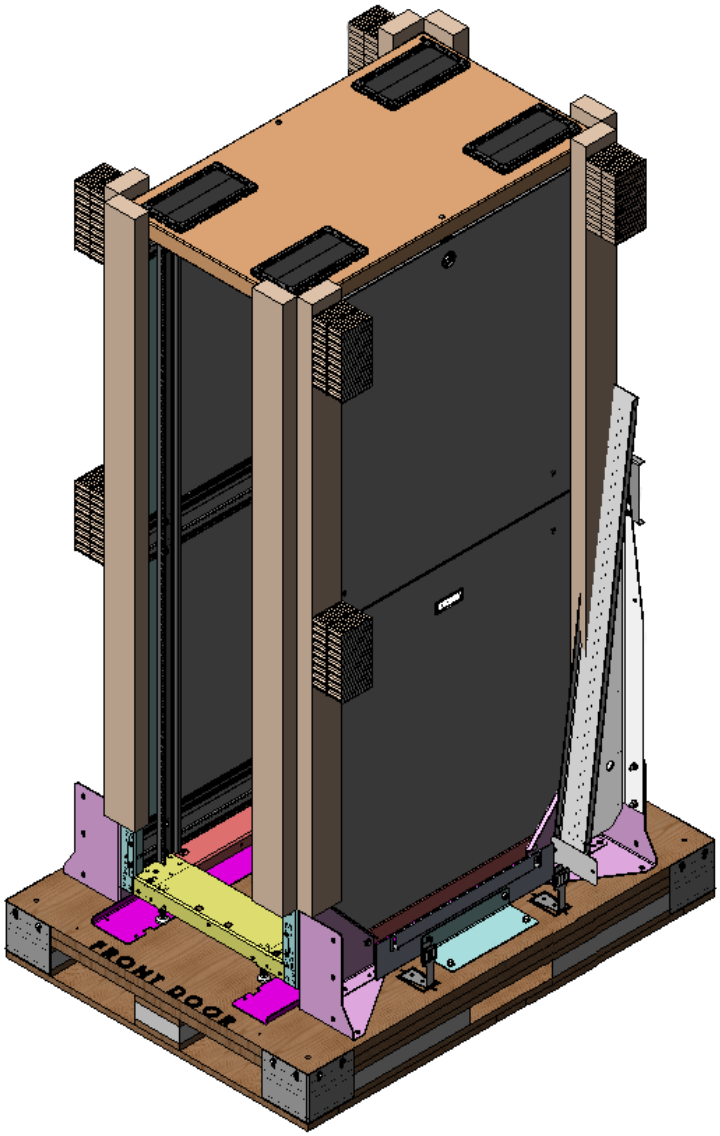
1. The system is mounted on a rugged cushioned plywood pallet using lag bolts, and four triangular shaped brackets. The bracket are then attached to the system itself.

Figure 1: Cushioned Pallet



2. The pallet contains two ramps affixed to the system using mounting brackets.

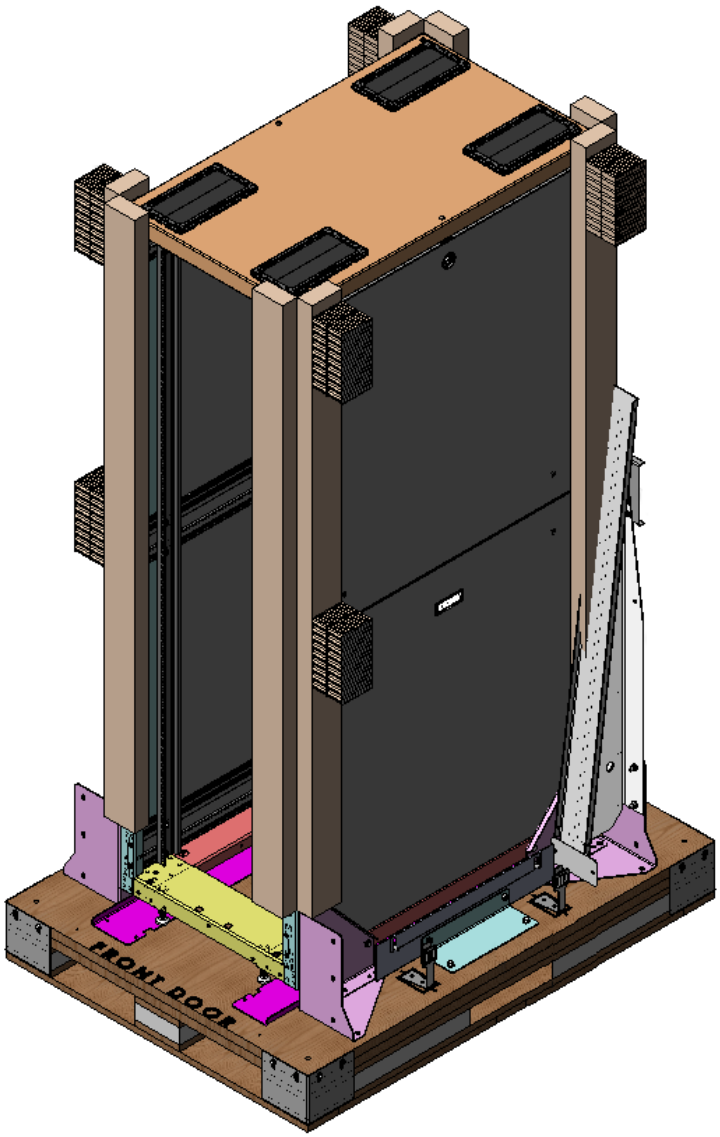
Figure 2: Shipping Brackets



3. The system is cleaned and prepared for shipment before adding the initial packing materials.

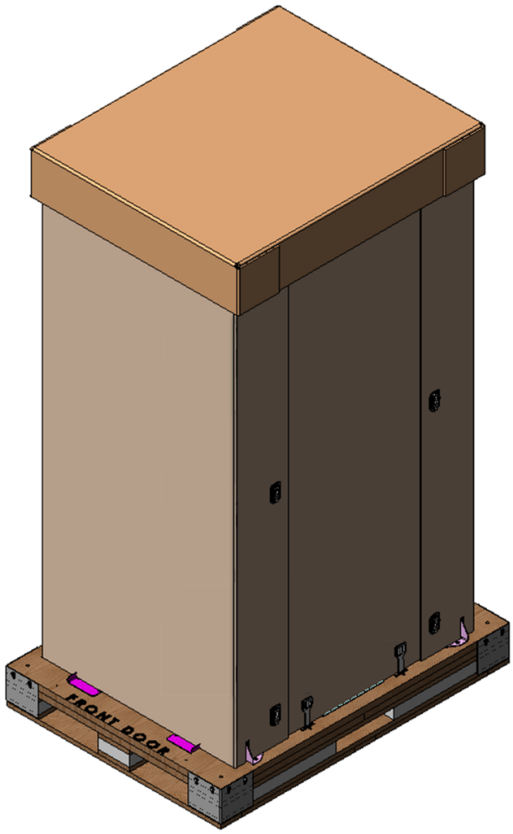
4. The initial packing materials are added on top of a poly bag that is utilized to protect the components from dust and debris Honeycomb paper pads create vertical cushion for the system. All initial packaging is held together with stretch wrap material.

Figure 3: Initial Packaging



5. The external packaging consists of corrugated pads and cardboard sleeves held on by plastic clips. A top hat tray cover is added to the top to protect the top of system and aid in the structural integrity of the packaging.

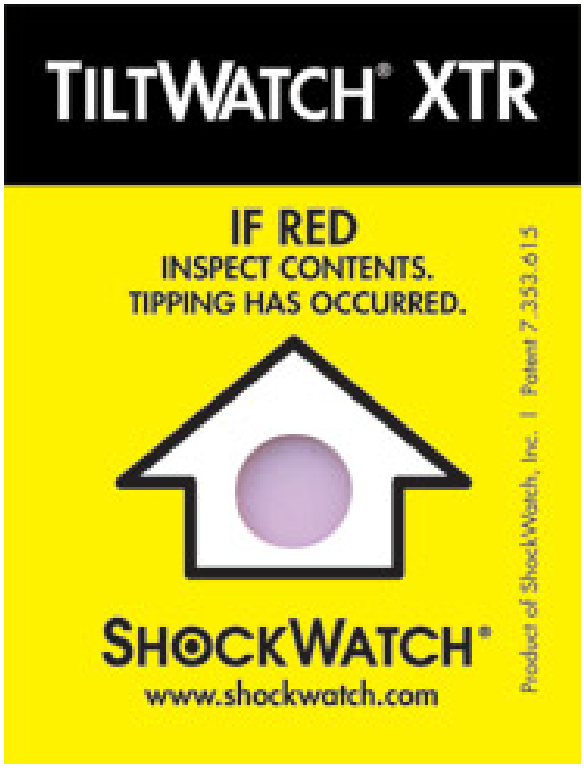
Figure 4: External Packaging



6. The packaging is completed with addition of official labeling, and damage and tip sensors.

Figure 5: ShockWatch Damage Sensor

Figure 6: TiltWatch Tilt Sensor



8 General Site Requirements

Topics:

The following chapter provides a general site requirements for the Active Archive System.

8.1 Enclosure Environmental Requirements

The enclosure based upon the drive maximum environmental specifications will be designed around the following environmental requirements:

Non-operating	Active Archive System
Temperature	-40°C to +66°C
Temperature Gradient	35°C per hour
Temperature De-rating	1°C per 300m above 3000m
Relative Humidity	8% to 90% (non-condensing)
Relative Humidity Gradient	30% per hour maximum
Altitude	-300m to 12,000m de-rated 300m per 1°C above 40°C
Altitude Gradient	22860m per hour maximum

Table 3: Non-operating Environmental Requirements

Operational	Active Archive System
Temperature	20° to 40°C de-rated 2% per 1,000 feet altitude increase
Temperature Gradient	20°C per hour
Temperature De-rating	1°C per 125m above 950m
Relative Humidity	Up to 95%
Relative Humidity Gradient	30% per hour maximum
Altitude	-300m to 3048m

Table 4: Operational Environmental Requirements

8.2 Site Environment

The Active Archive System is a fully configured rack system. The location of the system wiring room is an extremely important consideration for proper operation. Equipment placed too close together, inadequate ventilation, and

inaccessible panels, can cause malfunctions and shutdowns, and can make maintenance difficult. Plan for access to front, rear, and side panels of the system.

While planning your site layout and equipment locations, follow the precautions described in the Site Configuration section to help avoid equipment failures and reduce the possibility of environmentally caused problems.

Note: Improper operating environmental conditions could lead to anomalies in the system such as disk errors, marginal network connectivity and overall reduced mean time between failures.

8.3 Site Configuration

The following precautions will help you plan an acceptable operating environment for your system and will help you avoid environmentally caused equipment failures:

- Ensure that the room where your system operates has adequate air circulation. Electrical equipment generates heat. Without adequate air circulation, ambient air temperature may not cool equipment to acceptable operating temperatures.
- To avoid damage to the system, always follow ESD-prevention procedures described in the Preventing Electrostatic Discharge Damage section. Damage from static discharge can cause immediate or intermittent equipment failure.
- Once the system is installed into the data center or computer room location, ensure that the side panels are secure. The system is designed to allow cooling air to flow within it through specially designed configuration.

8.4 Airflow Consideration

The Active Archive System is designed to bring air in through the front rack system and vent through the rear of the system. The Active Archive System is required to generate up to 10484 Watts while running. The user needs to ensure both the front and rear of the Active Archive System stay clear from any materials that may block or disrupt the airflow in any way. Disrupting the airflow can cause the system to run the cooling fans at an excessive RPM, and in the worst case, start to shut down the system due to an overheating event.

The following rack airflow principles should be considered for best results:

- The appropriate conditioned air is presented at the equipment air intake
- The airflow in and out of the equipment must not be restricted

8.4.1 Cooling the Active Archive System

The Active Archive System has an advanced thermal algorithm that monitors all of the temperature sensors in the system. The six Storage Enclosure Basic contained within the system make adjustments to the fan speeds based upon the thermal sensors. The fan algorithm takes into account the component and the warning and critical threshold limits set by SES. If any temperature sensor gets to the warning limit, the fans speeds will increase to cool the component. If the critical threshold is crossed for a determinate amount of time, the system will begin to shut down components in order to prevent damage. If the enclosure encounters low temperatures, the system will reduce fan speed in an attempt to conserve power and not over-cool the system.

This algorithm is agnostic to effects of altitude and humidity. The algorithm simply works on temperatures within the system with emphasis on reducing power consumption.

8.5 Servicing Area

The servicing area in the front of the Active Archive System should allow for full racks to be installed and uninstalled with ease. In some cases, the space should be large enough for a pallet jack.

The serving area in the rear of the Active Archive System should allow enough space for a field person to service the system without moving it.

Note: The spacing should be sufficient for proper airflow. There should be airflow standards specific to the facility. The facility is responsible for determining the airflow spacing.

9 Hardware Requirements

Topics:

The following chapter provides the hardware requirements for the Active Archive System.

9.1 Physical Dimensions

The following section provides a description of the physical dimensions.

9.1.1 Physical Dimensions and Weight

Rack:

The following table displays the dimensions of the Active Archive System:

Hardware	Dimensions and Weight
Active Archive System	(height x width x depth) 82.52 inches x 23.62 inches x 40.35 inches 2,041 millimeters x 600 millimeters x 1,025 millimeters
	(weight) 2,250 lbs. 1,020 kg.

Table 5: Active Archive System Dimensions

9.1.2 Weight

Rack:

The following table displays the weight of the Active Archive System:

Hardware	Dimensions (Width x Height x Depth)
Active Archive System	2,250 lbs. 1,020 kg.

Table 6: Active Archive System Weight

Note: The weight mentioned previous is the total unpacked weight after delivery.

Controller (SM 1028U-TR4T+):

The following table displays the weight of the Controller:

Hardware	Dimensions (Width x Height x Depth)
Controller	Net weight is 26lbs. Gross weight is 41 lbs

Hardware	Dimensions (Width x Height x Depth)
	Note: The gross weight of the controller is based on the combined weight of the server, accessories kit, rail kit, and packaging

Table 7: Active Archive System Weight

Storage (SM 1018R-WC0R):

The following table displays the weight of the Storage server:

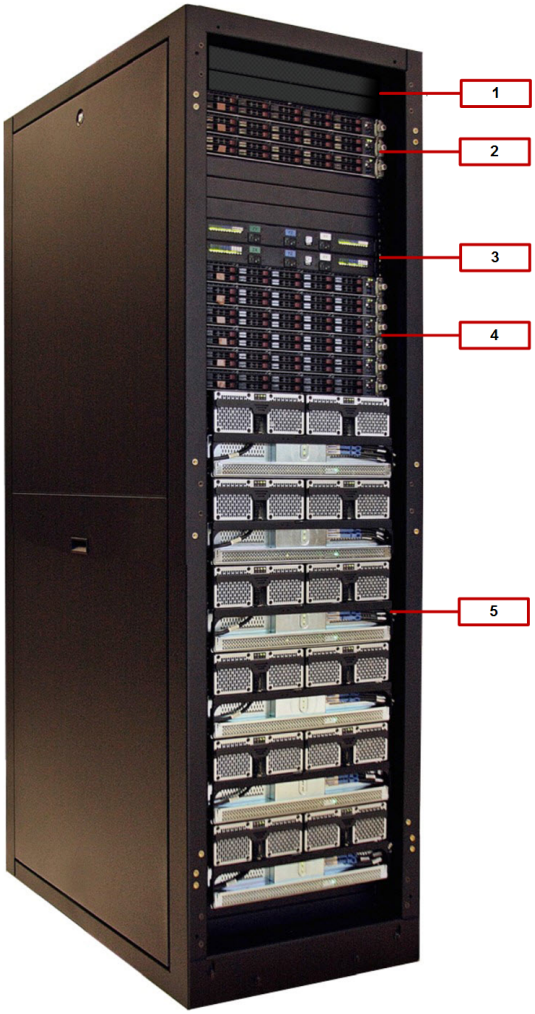
Hardware	Dimensions (Width x Height x Depth)
Storage server	Net weight is 25lbs. Gross weight is 40lbs **Note:** The gross weight of the storage server is based on the combined weight of the server, accessories kit, rail kit, and packaging

Table 8: Active Archive System Weight

9.1.3 Active Archive System Configuration

The following table displays the configuration for the Active Archive System:

Figure 7: Active Archive System



Hardware	Details	Number of Product
(1) Storage Interconnect	Celestica D2020	2
(2) Controller Nodes	Supermicro 1028U-TR4T+	3
(3) Power Distribution Unit	Delta PDU: Chatsworth Horizontal mount PDU, 30A 200-208Vac, 3-Phase **or** WYE PDU: Chatsworth Horizontal mount PDU, 16A 380-415Vac, 3-Phase	2
(4) Storage Nodes	Supermicro SYS-1018R-WCOR	6
(5) Storage Enclosure Basic	For the basic configuration, there are 98 drives per Storage Enclosure Basic.	6

Table 9: Active Archive System Full Configuration

9.1.4 Power Requirements

The power requirements of the Active Archive System are displayed in the following table:

Hardware	Power
Power Supply	Redundant intelligent PDUs
Power Consumption - typical	7,890 Watts
Power Consumption - maximum	10,484 Watts

Table 10: Active Archive System Power Requirements

PDU Type	Visual Representation	Plug Standard	Outlet Standard	Frequency	Phase	Amps (per phase)	Supply Range
Delta	 L15-30P	NEMA L15-30P	L15-30R	50/60Hz	3-Phase	30A	200-240V
WYE		IEC 60309 16A 4P+E plug	IEC 60309 16A 4P+E outlet	50/60Hz	3-Phase	16A	380-415V

Table 11: Active Archive System Power Cords

9.1.5 Fiber Cables and Approved Power Cords

Part	Type	Details
Fiber Cable	LC to LC Multimode Fiber patch cable,	50/125µm OM3 10Gb
Fiber Connecter	LC	N/A

Table 12: Approved Fiber Cables

10 Tools and Hardware

Topics:

The following chapter provides information on tools and hardware that will be needed for unpacking the Active Archive System.

Note: The following tools are not provided by HGST. Please ensure that you have these tools before the delivery of the system.

10.1 Required Tools

The following tools will be required for removing the system from the pallet:

Note: The following tools are not provided by HGST

- Pallet jack

  Note: The pallet jack should be rated to handle greater than 3,000 lbs.

- Ladder
- Cordless drill or socket wrench
- Socket adapter for drill
- One 10 millimeter socket
- One 13 millimeter socket
- One 9/16 inch socket
- Crescent wrench
- Level
- Tape measure

10.2 Pallet Hardware

HGST provides the required hardware for the removal of the Active Archive System from the pallet (for example, ramps and lag bolts required to affix the ramps onto the pallet).

Note: HGST does not provide the hardware to bolt the Active Archive System to the data center floor or ceiling.

11 Removing the Active Archive System from the Pallet

Topics:

The following chapter provides instruction on how to remove the Active Archive System from the pallet.

Attention: For best results, follow the steps in the order they appear in this document.

11.1 Removing the Active Archive System from the Pallet

To remove the Active Archive System from the pallet, do the following:

None

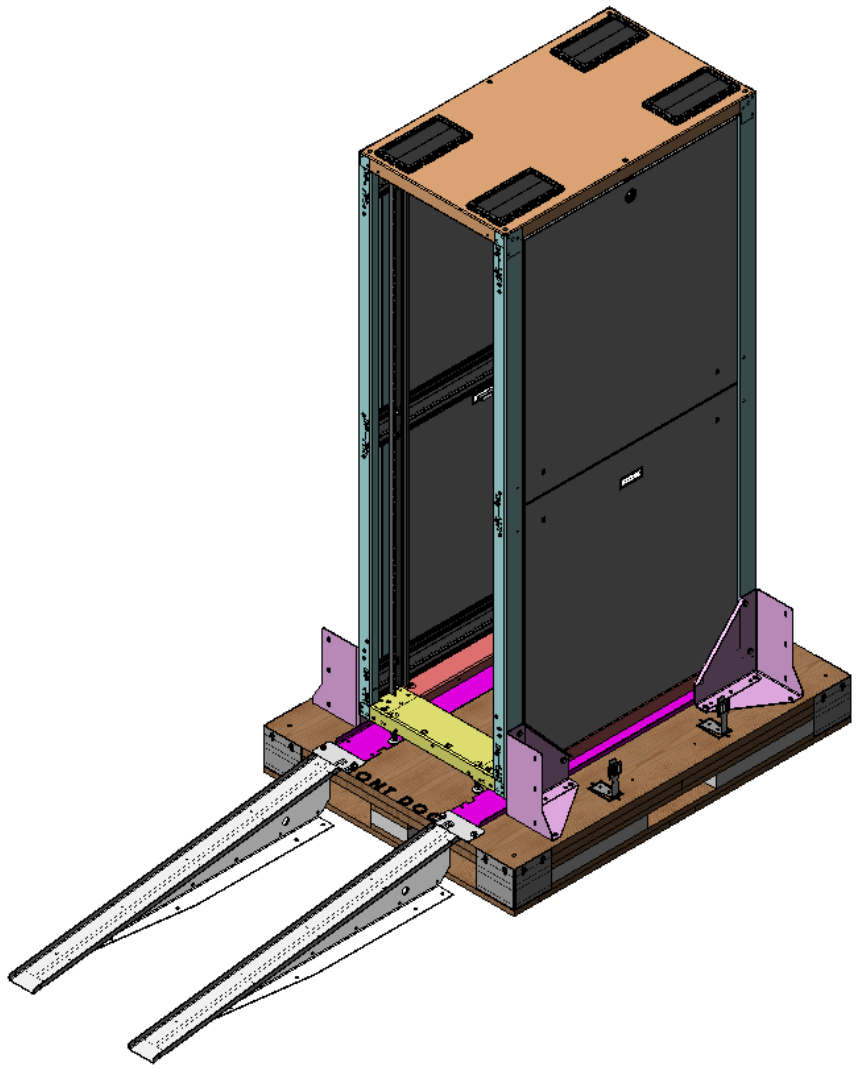
Table 13: Tools Required for this Task

Note:

- Ensure that the pallet is placed in a location that allows for enough space for both the unloading ramps and the system during the unloading process.

- It is recommended that you have four or more persons to assist with removing the system from the pallet.

Figure 8: Floor Anchor Brackets



1. From the side of the rack, unlock and remove the top side panels on either side of the rack.

   Note: This will ensure that you can maintain a good grip on the frame of the system.

2. At the rear of the rack, straighten the swivel casters.

Note: This is to ensure the system will not turn while being offloaded from the ramp.

Figure 9: Swivel Casters

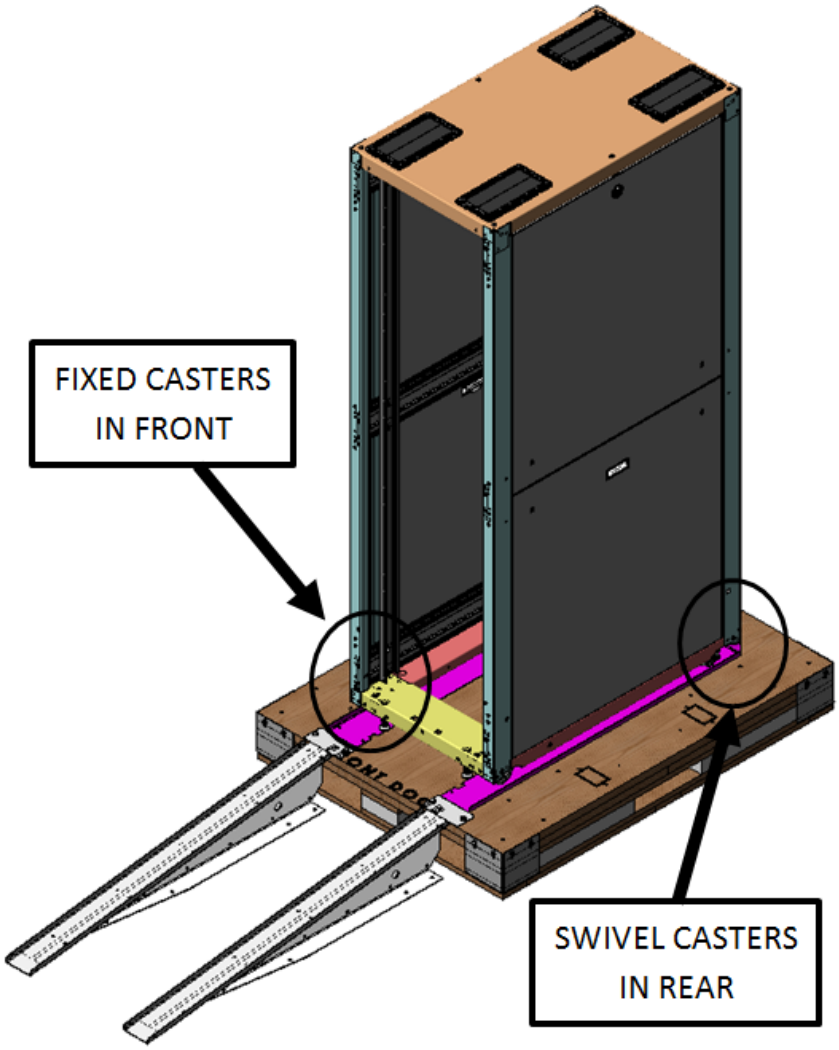
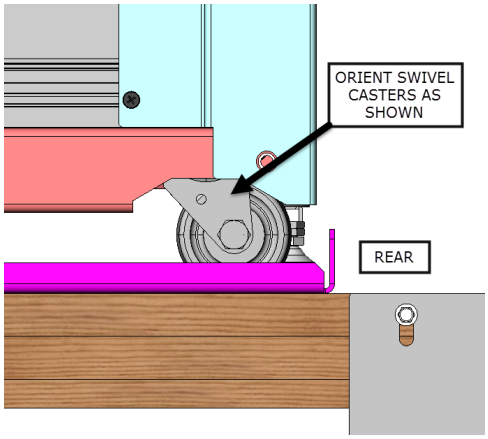


Figure 10: Swivel Casters Close View



3. Position one person on either side of the system.

Note: The persons at the side of the rack need to grip both the **ramp mount brackets** and the rack frame before moving.

4. Position **one or more** persons at the rear of the system.
5. Position **two** persons at the front of the system.
6. Carefully line up and push the system onto the ramp.

Note: At this point, the persons positioned around the system should safely and securely grasp the frame of the system.

7. Once all persons are ready, the person at the rear should push slowly and carefully on the system.
8. The persons at the bottom should brace for the weight of the system.
9. Carefully push the system down the ramp until it is clear of the ramps.

12 Installing the Active Archive System Hardware

Topics:

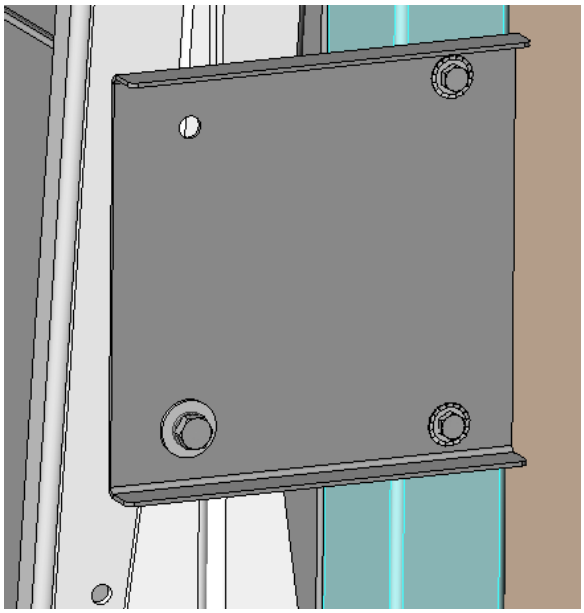
The following chapter provides instruction on how to install the Active Archive System hardware.

12.1 Moving the Active Archive System into Location

To move the Active Archive System into location, do the following:

1. Once the system has been remove from the pallet, identify the exact location you intend to install the system.
2. From the front of the system, firmly grip the rack frame and ramp mount brackets.

Figure 11: Ramp Mount Bracket



Note: It is much easier to navigate the system if you push from the front of the rack. This is due to the only casters with ability to turn being on the front of the system.

3. Carefully push the system into place.

Note: Ensure that you take necessary precaution so as not to damage any components on the system or any existing systems within the installation space.

4. Identify that all sources needing to connect to the system are within the correct distance.

12.2 Connecting to the Active Archive System

To connect power cords and fiber optic connections, do the following:

Note: Ensure the system has been bolted to the bracing in the floor and ceiling before connecting power cords and fiber optic connections.

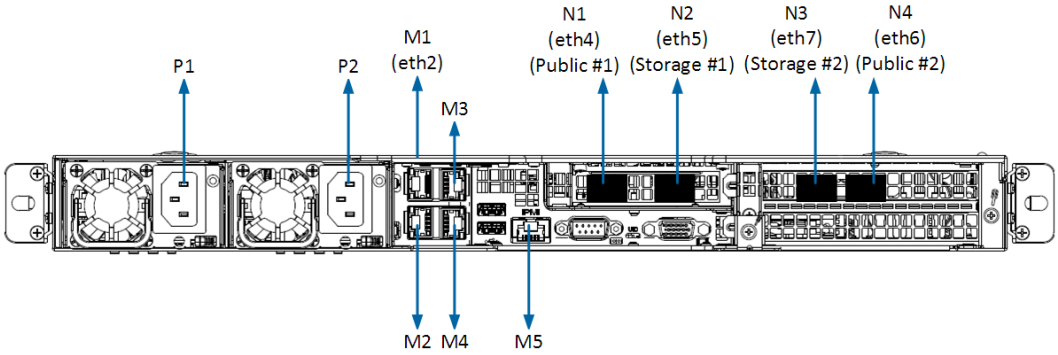
1. From the ceiling cable guides, direct the fiber optic connections through the top of the rack.

   Note: For more information on the approved fiber cables, see Fiber Cables and Approved Power Cords on page 30.

2. Connect a fiber optic connector to each public network port on each Controller Node.

   You must connect a total of six fiber optic connectors: two on each Controller Node. Connect the fiber optic connectors to the ports labeled **N1** (Public #1) and **N4** (Public #2) in the figure below, **on each Controller Node**.

   Figure 12: Controller Node, Back, Public Network Ports



3. Once connected to the Controller Nodes, organize and strap fiber cables together.
4. From the rear of the rack, locate the two external power cords.

   Note: The two power cords are wrapped and stored under the rack during shipment.

5. Connect the external power cords into two different NEMA power distribution networks.

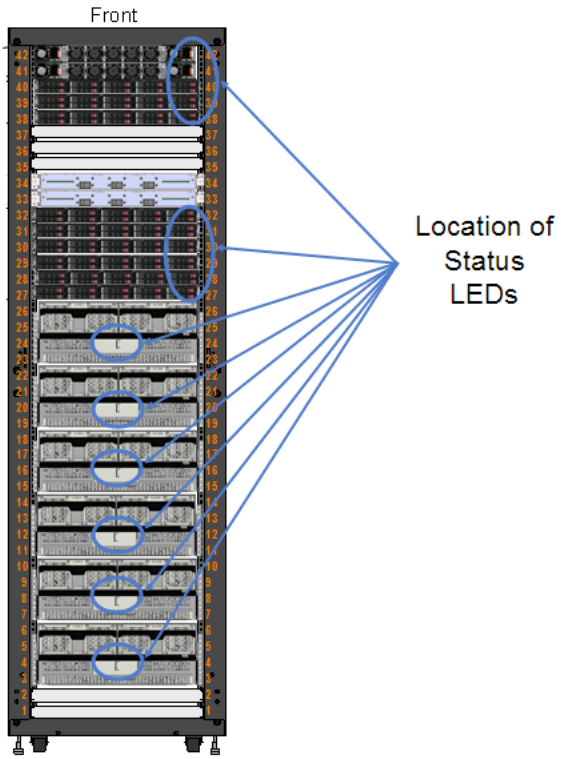
   Note: For more information on the approved power cords, see Fiber Cables and Approved Power Cords on page 30 .

   The system begins to power up automatically as soon as the power cords are connected. The intelligent PDUs control the power-on sequence. The power-on sequence takes approximately 2 minutes.

6. Confirm that all hardware components power up in the correct order.

Observe the status LEDs on the components illuminating in the following order. There is a gap (in seconds) between each segment.

Figure 13: Status Lights on the Active Archive System



a) Storage Interconnect
b) Controller Nodes
c) Storage Enclosure Basic storage arrays
d) Storage Nodes

The Active Archive System is fully powered on.

13 Initial System Bring Up

To complete the initial bring up of the Active Archive System, see the *Installation Guide*.

Active Archive System Glossary

A

AC	**Alternating Current**
ACMA	**Australian Communications and Media Authority**

Top of A | Top of Glossary

B

BIOS	**Basic Input/Output System**
BIS	**Business Information System**
BIST	**Built-In Self-Test**
BMC	**Baseboard Management Controller**
BOM	**Bill of Materials**
BSMI	**Bureau of Standards, Metrology and Inspection**

Top of B | Top of Glossary

C

CDB	**Computer Data Bus**
CLI	**Command Line Interface**
CS	**Climate Saver**

Top of C | Top of Glossary

D

DC	**Direct Current**

Top of D | Top of Glossary

E

EC	**Engineering Change**
EEPROM	**Electrically Erasable Programmable Read-Only Memory**
EMC	Electromagnetic Compatibility
EMI	**Electromagnetic Interference**
ESD	**Electrostatic Discharge**
EVPD	**Enable Vital Product Data**

Top of E | Top of Glossary

F

FCC	**Federal Communications Commission**
FRU	**Field Replaceable Unit**
FW	**Firmware**

Top of F | Top of Glossary

G

GBE	**Gigabit Ethernet**
GPIO	**General-Purpose Input/Output**
GUI	**Graphical User Interface**

Top of G | Top of Glossary

H

HD	**Hard Drive**
HDD	**Hard Disk Drive**

Top of H | Top of Glossary

I

ICT	**In-circuit Test**
IEC	**International Electrotechnical Commission**
I/O	**Input/Output**
IOC	**Input/Output Controller**
IOM	**I/O Module**
IPMI	**Intelligent Platform Management Interface**

Top of I | Top of Glossary

J

JBOD	**Just a Bunch of Disks**

Top of J | Top of Glossary

K

KVALITET	Spell out acronym here

Top of K | Top of Glossary

L

LED	**Light-Emitting Diode**
LPC	**Low Pin Count**
LPH	**Low Profile Hybrid**
LUN	**Logical Unit Number**

Top of L | Top of Glossary

M

MAC	**Media Access Control**
miniSAS	**Mini Statistical Analysis System**

Top of M | Top of Glossary

O

OS	**Operating System**
OUI	**Organizationally Unique Identifier**

Top of O | Top of Glossary

P

PCB	**Printed Circuit Boards**
PCI	**Peripheral Component Interconnect**
PDB	**Power Distribution Board**
PDU	**Power Distribution Unit**
PMBus	**Power Management Bus**
POST	**Power On Self Test**
PSU	**Power Supply Unit**
PHY	**Physical Layer**
PWM	**Pulse-Width Modulation**
PWR	**Power**

Top of P | Top of Glossary

R

ROC	**Recovery Oriented Computing**
RTC	**Real Time Clock**

Top of R | Top of Glossary

S

SAS **Serial Attached SCSI**

SATA **Serial Advanced Technology Attachment**

SBB **Storage Bridge Bay**

SCSI **Small Computer System Interface**

SDK **Software Development Kit**

SEP **SCSI Enclosure Processor**

SES **SCSI Enclosure Services**

SMART **Self-Monitoring, Analysis and Reporting Technology**

SMP **Server Message Block**

SMB **Server Message Block**

SPI **Serial Peripheral Interface**

SSP **Serial SCSI Protocol**

Top of S | Top of Glossary

T

TCA **Telecommunications Computing Architecture**

Top of T | Top of Glossary

U

UART **Universal Asynchronous Receiver/Transmitter**

Top of U | Top of Glossary

V

VBOD **Virtualized Bunch of Disks**

VPD **Vital Product Data**

Top of V | Top of Glossary

W

WOL **Wake On LAN**

WOS **Wake On SAS**

Top of W | Top of Glossary

X

XDP **XML Data Package**

Top of X | Top of Glossary

Index