Site Requirements Document

HGST Active Archive System SA-7000

September 2015

1ET0038

Revision 1.1

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3403 Yerba Buena Road
San Jose, CA 95135
Produced in the United States

One MB is equal to one million bytes, one GB is equal to one billion bytes, one TB equals 1,000GB (one trillion bytes) and one PB equals 1,000TB when referring to storage capacity. Usable capacity will vary from the raw capacity due to object storage methodologies and other factors.

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1 Document Summary

Topics:

- Scope
- Intended Audience
- References

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

1.1 Scope

The following document provides the following:

- Site specific requirements for the Active Archive System.
- A combination of the site survey, shipping, delivery, and specifications regarding the site and the system.
- Allows us to gather information to effectively determine what is necessary to provide the customer with our product.

1.2 Intended Audience

The following document is intended for users that require a better understanding of the site requirements involved in the delivery, unpacking, inspection, and care of the Active Archive System.

1.3 References

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

2 For More Information

Topics:

- Points of Contact

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:

- Introduction

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:

- Regulatory Statement of Compliance

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:

Table 1: Product Safety Compliance

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
Brazil	INMETRO	IEC 60950-1

Country/Region	Authority or Mark	Standard
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

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:

Table 2: Product EMC/Immunity Compliance

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

5 Safety and Regulatory

Topics:

- Optimizing Location
- Safety Warnings and Cautions
- Electrostatic Discharge
- Rackmountable Systems
- Power Connections
- Power Cords
- Safety and Service

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:

- FCC Class A Notice
- FCC Verification Statement (USA)
- ICES-003 (Canada)
- CE Notices (European Union), Class A ITE
- Europe (CE Declaration of Conformity)
- Japanese Compliance Statement, Class A ITE
- Taiwan Warning Label Statement, Class A ITE
- KCC Notice (Republic of Korea Only), Class A ITE

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
A급 기기 (업무용 정보통신기기)	이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이 점을 주의하시기 바라며 만약 잘못 판매 또는 구입하였을 때에는 가정용으로 교환하시기 바랍니다.

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 Shipping Company Responsibilities

Topics:

- Shipping Company Responsibility
- Charging the Shipping Company

The following chapter provides responsibilities for the shipping company delivering the Active Archive System.

7.1 Shipping Company Responsibility

The following list displays the responsibility of the shipping company:

1. To ensure their methods and materials comply with all applicable laws and regulations.
2. To ensure the Active Archive System shipment remain packaged in the original packaging such that the Active Archive System products arrive at their destination free from damage.
3. To ensure export shipments are packaged, labeled, and marked in compliance with HGST guidelines.

7.2 Charging the Shipping Company

At any time, HGST reserves the right to charge the shipping company for the cost of labor and materials for any repackaging resulting from noncompliance with this or any other specification referenced on the **purchase order**.

8 Communication

Topics:

- Communication

The following chapter provides communication information for the shipping process of the Active Archive System.

8.1 Communication

All shipping company packaging questions and communications are to be coordinated through HGST Purchasing and/or Logistics. First time shipments should be audited by the shipper to verify the Active Archive System product packaging conforms and does not exhibit any issues which may cause damage or delay during the shipment.

Any shipping company requiring deviation from requirements contained in this specification must receive authorization from HGST Procurement and/or Logistics.

9 Modes of Shipment

Topics:

- Domestic Ground Shipping
- Domestic Freight Shipping
- International Shipping

The following chapter provides modes of shipment for the Active Archive System.

9.1 Domestic Ground Shipping

The delivery of the Active Archive SystemActive Archive SystemActive Archive System through ground shipping should be accomplished by a shipping company that has the following available:

- Air ride delivery truck to reduce the amount of vibration and impact shock during transit.
- Proper strapping methods to ensure the system wont shift during transit.
- Proper padding to reduce damage from other shipping units within the delivery truck.
- A lift gate rated to 3,000 lbs. lifting capacity.

9.2 Domestic Freight Shipping

The delivery of the Active Archive System through freight shipping should be shipped using the following requirements:

- Plane cargo space large enough to accommodate the vertical and horizontal space of the system
- Proper heavy padding

  Note: This is to reduce the amount of damage from other objects being shipped in the same space.

- Proper straps

  Note: This is to reduce the amount of movement during the flight.

- 3,000 lbs. capacity for all surfaces that the system will move over or be stored on

9.3 International Shipping

The delivery of the Active Archive System through overseas shipping should be shipped using the following requirements:

- Plane cargo space large enough to accommodate the vertical and horizontal space of the system
- Proper heavy padding

  Note: This is to reduce the amount of damage from other objects being shipped in the same space.

- Proper straps

Note: This is to reduce the amount of movement during the flight.

- 3,000 lbs. capacity for all surfaces that the system will move over or be stored on

Note: Ensure that all international standards for shipment have been arranged.

10 General Site Requirements

Topics:

- System Environmental Requirements
- Power Requirements
- Site Environment
- Site Configuration
- Airflow Consideration
- Servicing Area

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

10.1 System Environmental Requirements

The system based upon the drive maximum environmental specifications is designed around the following environmental requirements:

Table 3: Non-operating 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

10.2 Power Requirements

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

Table 4: Active Archive System Power Requirements

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

Hardware	Power
Power Consumption - maximum	10,484 Watts

Table 5: Active Archive System Power Cords

PDU Type	Visual Representation	Plug Standard	Outlet Standard	Frequency	Phase	Amps (per phase)	Supply Range
Delta		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

10.3 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.

10.4 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.

10.5 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

10.5.1 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.

10.6 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.

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11 Hardware Requirements

Topics:

- Physical Dimensions

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

11.1 Physical Dimensions

The following section provides a description of the physical dimensions.

11.1.1 Packed System Dimensions

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

Table 6: Packaged Active Archive System Dimensions

Package	Dimensions (height x width x depth)
Packed Active Archive System	89.5 inches x 36 inches x 45 inches 2,273.3 millimeters x 914.4 millimeters x 1,143 millimeters
Pallet	6.5 inches x 40.25 inches x 54 inches 165.1 millimeters x 1,022.35 millimeters x 1,371.6 millimeters

Note: The route to the data center or computer room location should have a clearance of 96 inches (2,438.4 millimeters) high and 45 inches (1,143 millimeters) wide to allow for maneuverability.

11.1.2 Physical Dimensions and Weight

Rack:

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

Table 7: Active Archive System Dimensions

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.

11.1.3 Packed System Weight

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

Table 8: Packaged Active Archive System Weight

Hardware	Dimensions (Width x Height x Depth)
Active Archive System	2,431 lbs. 1102 kg.

Note: Ensure that the data center or computer room route and location have a floor rated at approximately 3,000 lbs to allow for adequate support.

11.1.4 Weight

Rack:

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

Table 9: Active Archive System Weight

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

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:

Table 10: Active Archive System Weight

Hardware	Dimensions (Width x Height x Depth)
Controller	Net weight is 26lbs. Gross weight is 41 lbs **Note:** The gross weight of the controller is based on the combined weight of the server, accessories kit, rail kit, and packaging

Storage (SM 1018R-WC0R):

The following table displays the weight of the Storage server:

Table 11: Active Archive System Weight

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

11.1.5 Active Archive System Configuration

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

Figure 1: Active Archive System

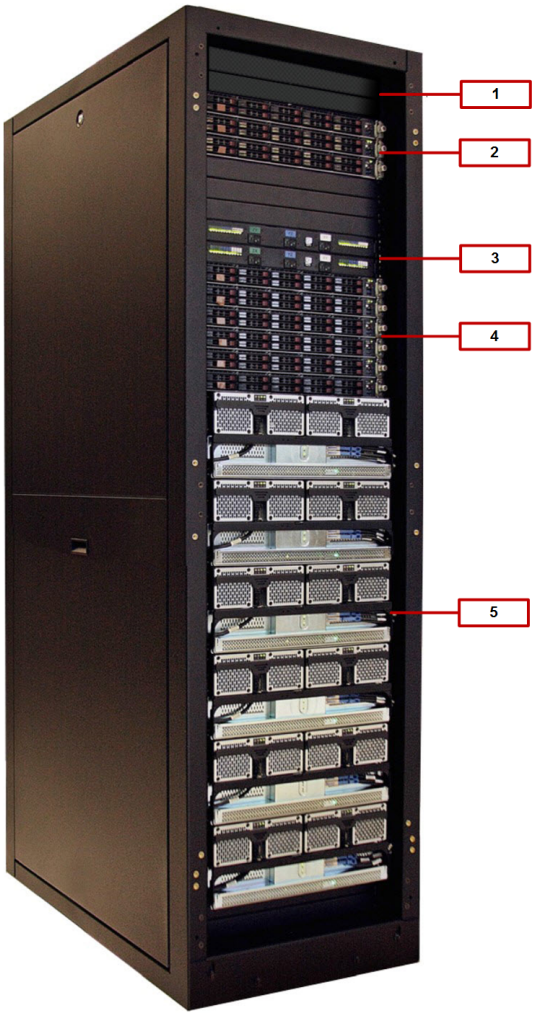


Table 12: Active Archive System Full Configuration

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

12 Site Preparation Specifications

Topics:

- Dock Delivery
- Ramp Delivery
- Clearance
- Flooring

The following chapter provides the preparation specifications for the Active Archive System.

12.1 Dock Delivery

During a dock delivery, if the facility does not have a dock, they are required to schedule a delivery truck that contains a lift gate rated for approximately 3,000 lbs.

12.2 Ramp Delivery

During a ramp delivery, it is important to have some additional assistance in moving the system on the pallet jack until it is on level flooring.

12.3 Clearance

It is very important that the doorways, hallways, and elevators clearance allow for enough room to deliver the system. The route to the data center or computer room location should have a clearance of 96 inches (2,438.4 millimeters) high and 45 inches (1,143 millimeters) wide to allow for maneuverability.

12.4 Flooring

It is very important that the flooring en route to and in the computer room or data center are rated to support the weight of the system. Ensure that the data center or computer room route and location have a floor rated at approximately 3,000 lbs to allow for adequate support.

If there are ramps, it is important that they are also rated at approximately 3,000 lbs.

During delivery, it is very important that Masonite or a like material is utilized to cover the floor. This is to reduce the probability of tipping the rack if the pallet jack gets caught in a crack in the tile. It also provides protection for the floors while the system is being transported on the pallet jack.

The following table displays the floor weight support requirements for Active Archive System:

Table 13: Floor Weight Support Requirements

Model	Floor Reinforcement Area
SA-7000	82.52 inches x 23.62 inches x 40.35 inches 2,041 millimeters x 600 millimeters x 1,025 millimeters

13 Tools and Hardware

Topics:

- Required Tools
- Approved Fiber Cables
- Inspecting the Active Archive System

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.

13.1 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

13.2 Approved Fiber Cables

Connect the Active Archive System to the host, using high quality fiber cables.

The following table displays the **customer supplied equipment**:

Table 14: Approved Fiber cable

Piece of Equipment	Details	Quantity	
LC to LC Multimode Fiber Optic Patch Cable	LC Multimode 50/125µm MMF OM3 10Gb Laser Optimized Fiber	6	[ ]

13.3 Inspecting the Active Archive System

Do not unpack the Active Archive System until you are ready to install it. If the final installation site will not be ready for some time, keep the Active Archive System in its shipping container to prevent accidental damage.

Inspect all items for shipping damage. If anything appears to be damaged, or if you encounter problems installing your Active Archive System, refer to the Points of Contact on page 10 to contact Elastic Storage Platforms customer service.

For safety and regulatory information, see the Safety and Regulatory on page 14 section.

14 Removing the Active Archive System from the Pallet

Topics:

- Removing the Active Archive System from the Pallet

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.

14.1 Removing the Active Archive System from the Pallet

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

Table 15: Tools Required for this Task

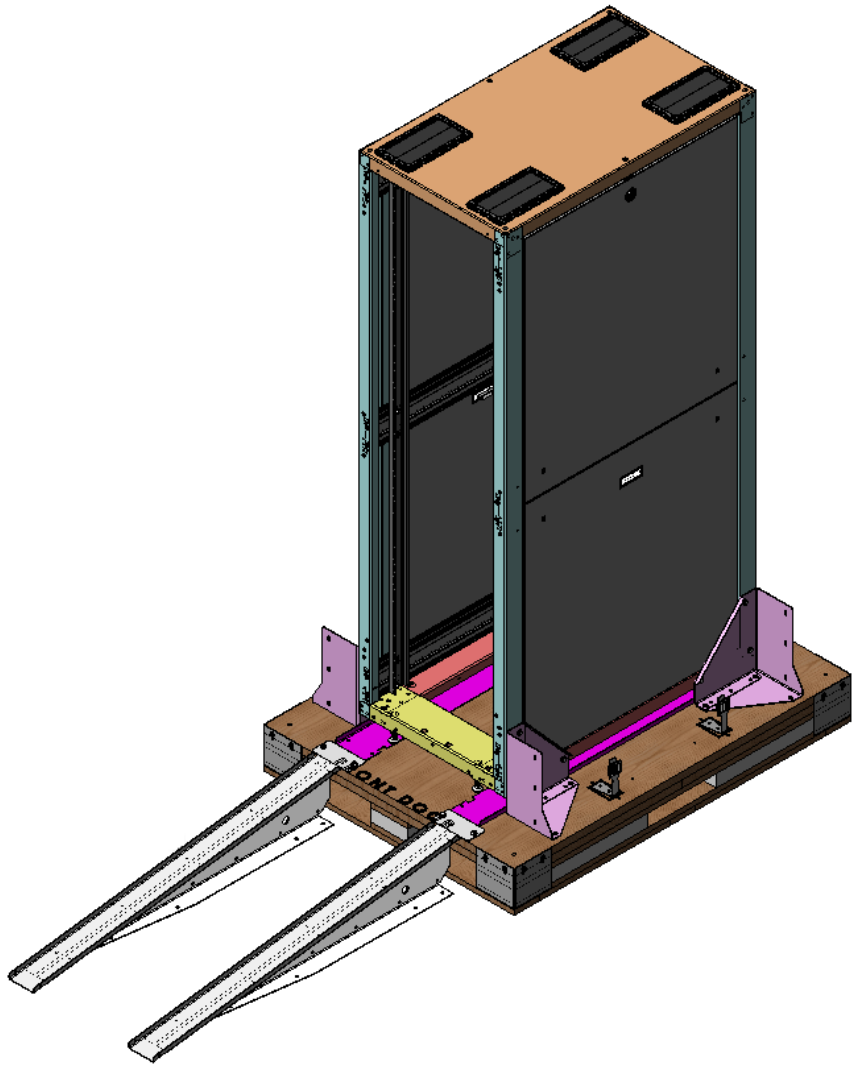
None

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 2: 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 3: Swivel Casters

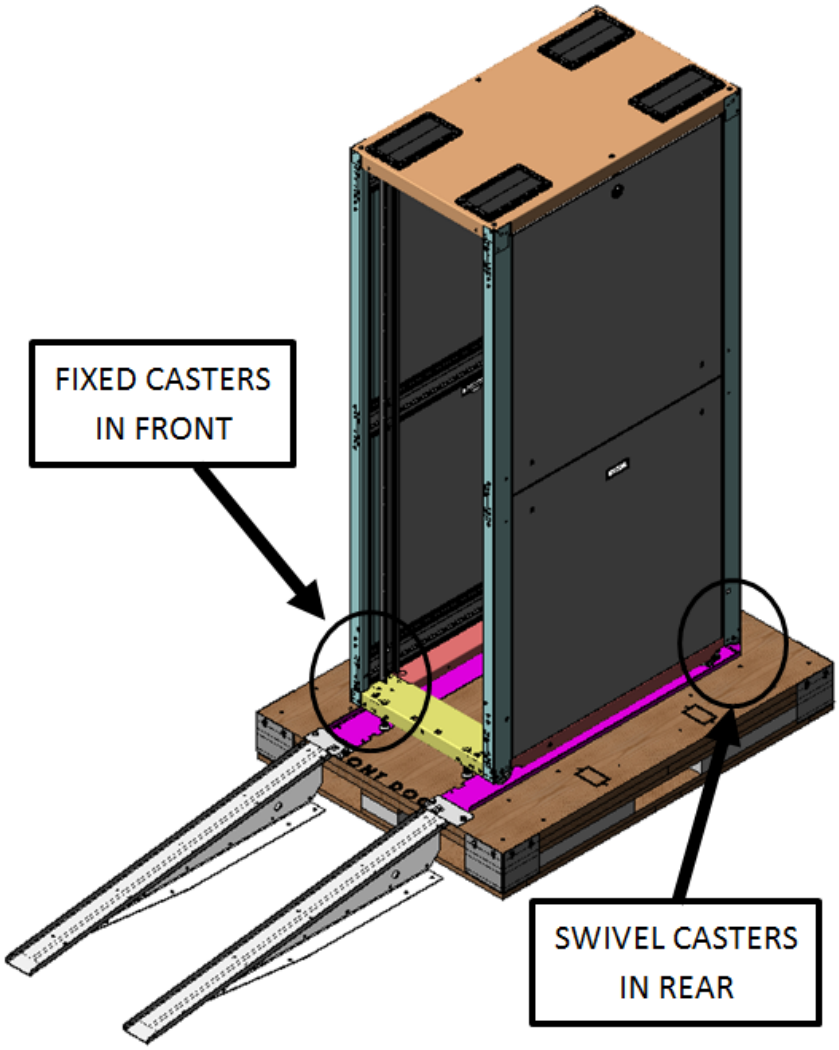
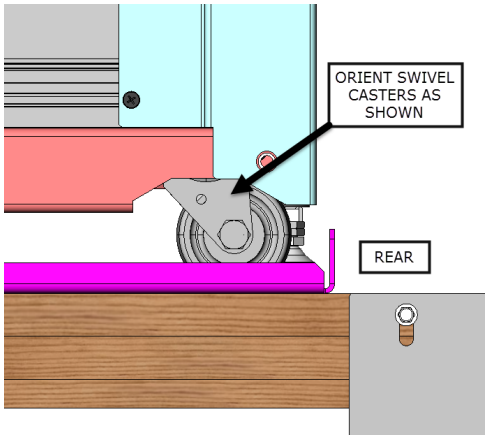


Figure 4: Swivel Casters Close View



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.

15 Installing the Active Archive System Hardware

Topics:

- Installing the Active Archive System

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

15.1 Installing the Active Archive System

For instructions on installing the Active Archive System, refer to the *Installation Guide*.

16 Initial System Bring Up

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

17 Site Checklists

Topics:

- Special Instructions
- Site Inspection Checklist

The following chapter provides the site specific checklists for the Active Archive System.

17.1 Special Instructions

Table 16: Delivery Checklist

Preparation for Delivery	
Address of delivery.	
Time of delivery.	a.m. or p.m.?
Location of ramp, lift, or entry point.	North, south, east, or west
Point person who will oversee delivery process.	

Table 17: Special Instructions

Notes:

17.2 Site Inspection Checklist

The following checklist is intended to be used for inspection of the Active Archive System:

Table 18: Inspection Checklist

No.		**Yes**	**No**	**Comment or Date**
Facility				

No.		Yes	No	Comment or Date
1.	Will the rack be unpacked in a different location than it is installed in?			
2.	Is the raised floor capable of supporting up to 3,000 pounds or 1360 kilograms?			
3.	Is floor protection available for delivery?			
Server Room				
4.	Is there adequate space for maintenance needs?			
5.	Is access to the site or server room restricted?			
6.	Are there channels or cutouts for cable routing?			
7.	Are customer supplied cables available and of the proper type?			
8.	Are rack anchors and stabilizers located in the space in which the system will be installed?			
Power and Lighting				
9.	Are lighting levels adequate for maintenance?			
10.	Are A/C outlets available for servicing needs? (for example, vacuuming)?			
11.	Does the input voltage correspond to equipment specifications?			
12.	Does the input frequency correspond to equipment specifications?			
13.	Is power conditioning equipment installed?			
14.	Is there a dedicated branch circuit for equipment?			
15.	Are the input circuit breakers adequate for equipment loads?			
Safety				
16.	Is there an emergency power shut-off switch?			
17.	Is a fire protection system installed in the server room?			
18.	Is antistatic flooring installed?			

No.		Yes	No	Comment or Date
19.	Do any equipment servicing hazards exist (loose ground wires, poor lighting, or others)?			
Cooling				
20.	Can cooling be maintained?			
21.	Can temperature changes be maintained according to equipment specifications?			
22.	Can humidity levels be maintained?			
23.	Are air conditioning filters installed and clean?			

17.2.1 Delivery Survey

Special instructions or recommendations should be documented. The following list gives examples of special instructions or issues:

- Packaging restrictions at the facility (for example, size and weight limitations)
- Special delivery procedures
- Special equipment required for installation (for example, tracking or hoists)
- What time the facility is available for installation (after the equipment is unloaded)
- Special security requirements applicable to the facility

Note:

- To better define answers, please circle options where available.
- HGST does not advocate tipping configured racks to navigate height restricted doorways.

Table 19: Delivery Checklist

Preparation for Delivery		
1.	What are the hours the facility is open for deliveries?	a.m. or p.m.?
2.	Can delivery be done during the day during normal business hours?	Yes or No
3.	Are appointments required?	Yes or No
4.	Are there any security or building access requirements?	Yes or No
5.	On what floor in building will the equipment be installed? This information should take height and width clearances of various obstacle along the route into consideration	

6.	If equipment is not going on the first floor, is there an elevator? **Note:** For elevator specifics, please see the Elevator section below.	Yes or No
7.	Is the path from the loading dock to the computer room or server room robust enough to support the weight of the configured system?	Yes or No
Dock Delivery		
8.	Is the dock large enough for a semitrailer?	Yes or No
9.	What is the location of the dock?	
10.	What is the street name if different than company address?	
Street Delivery		
11.	What is the location of the access door?	North, south, east, or west
12.	What is the street name, if different than company address? (cross street)	
13.	What is the height of access door?	feet or meters
14.	What is the width of access door?	feet or meters
15.	Are there any required special permits? Please list the type and agency obtained from.	Yes or No
Elevator		
16.	What is the capacity of the elevator?	pounds or kilograms
17.	What is the depth of the elevator?	feet or meters
18.	What is the height of the elevator?	feet or meters
19.	What is the width of the elevator?	feet or meters
Stairs		
20.	How many flights of stairs are there?	
21.	What is the width of the stairwells?	feet or meters
Installation Space		
22.	Is there a delivery/unpacking/staging area?	Yes or No
23.	Is there a raised floor or are there any thresholds of concern?	Yes or No
24.	If there is a raised floor, how deep is it?	feet or meters

25.	What sort of equipment maneuvering is required to gain access?	
26.	Are there special equipment needs required to place the equipment in the computer room? (for example, steel plates or floor covers)	Yes or No Specify special needs, if any:

Table 20: Additional Notes

Notes:

Active Archive System Glossary

A

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

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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**

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O

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

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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**

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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**

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W

WOL	**Wake On LAN**
WOS	**Wake On SAS**

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X

XDP **XML Data Package**

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