Shipping and Delivery Specifications

HGST Active Archive System SA-7000

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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.

References in this publication to HGST products, programs or services do not imply that HGST intends to make these available in all countries in which HGST operates.

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Information is true as of the date of publication and is subject to change. Actual results may vary. This publication is for general guidance only. Photographs may show design models.

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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 28.

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
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:

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.

8 Communication

Topics:

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:

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 Packaging

Topics:

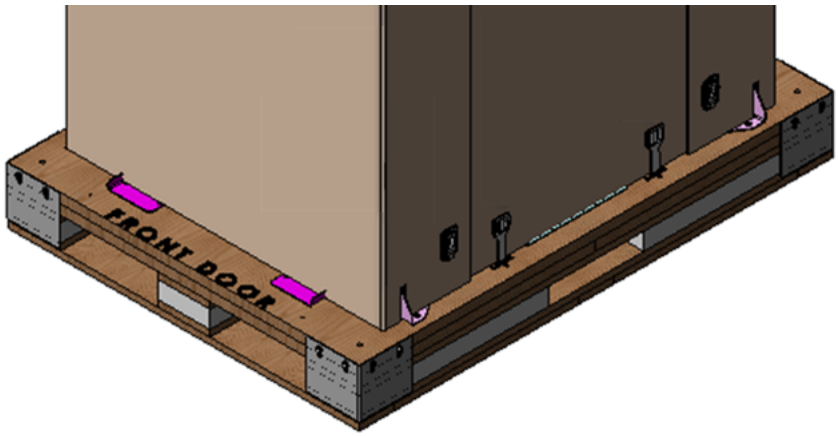
The following chapter provides an overview of the packaging design of the Active Archive System.

10.1 Packaging Overview

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

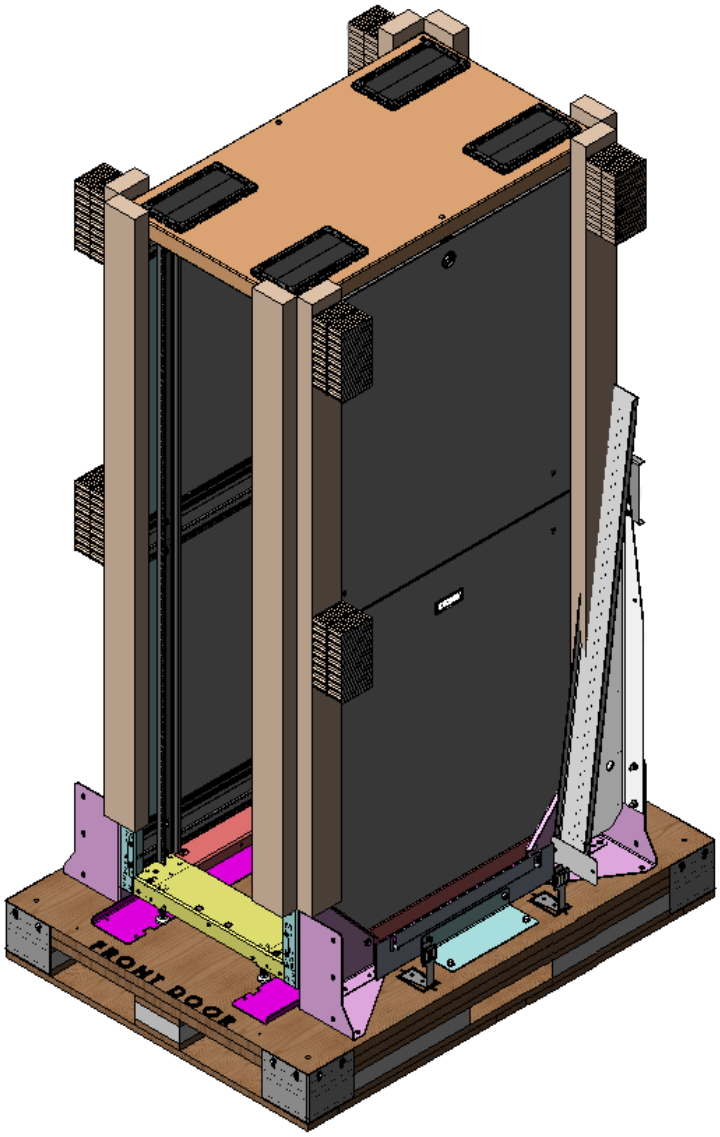
1. The system is mounted on a rugged cushioned plywood pallet using lag bolts, and four triangular shaped brackets. The bracket are then attached to the system itself.

Figure 1: Cushioned Pallet



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

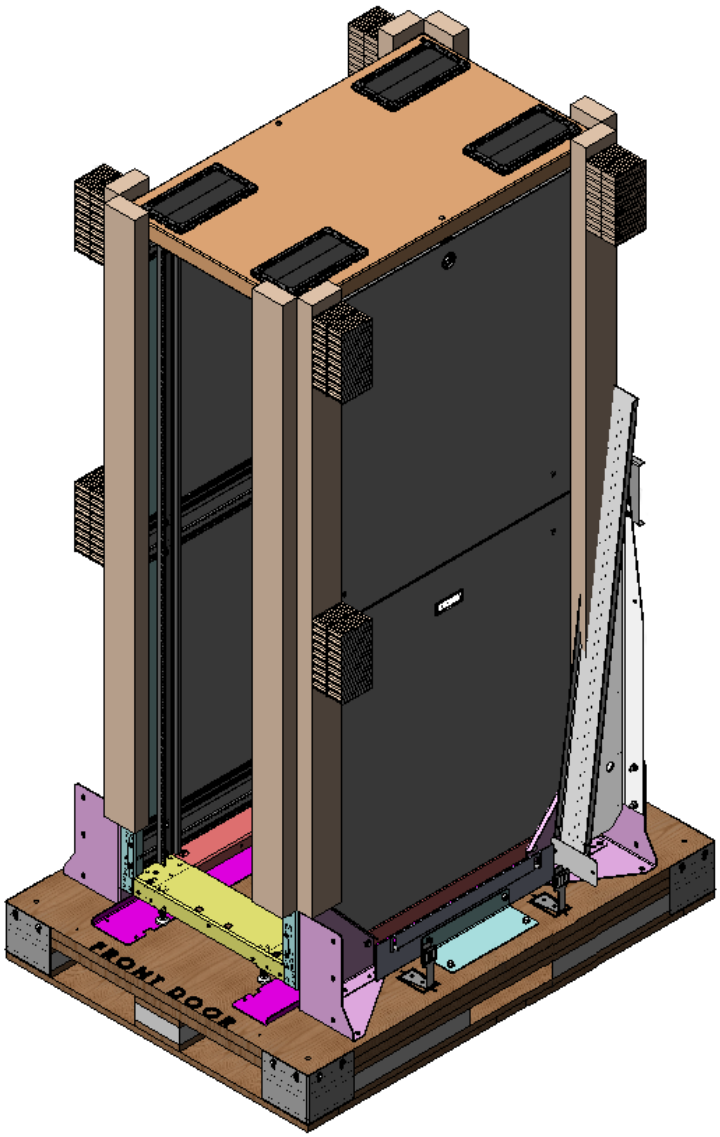
Figure 2: Shipping Brackets



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

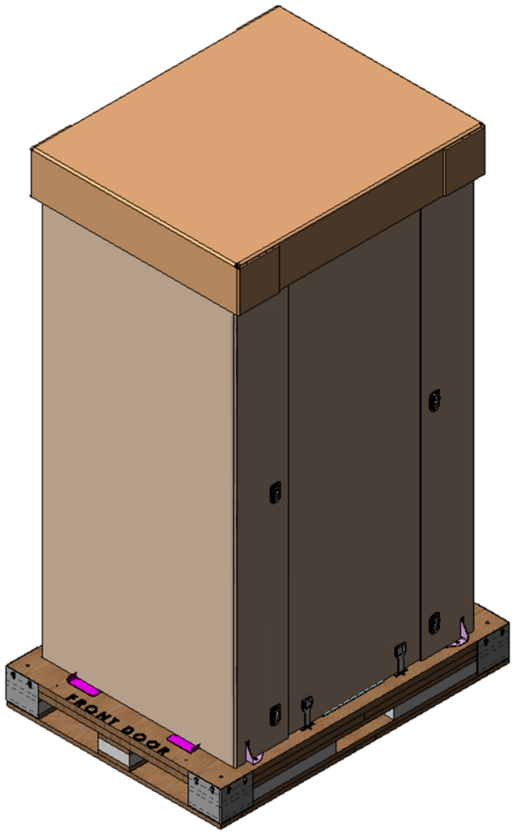
4. The initial packing materials are added on top of a poly bag that is utilized to protect the components from dust and debris Honeycomb paper pads create vertical cushion for the system. All initial packaging is held together with stretch wrap material.

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.

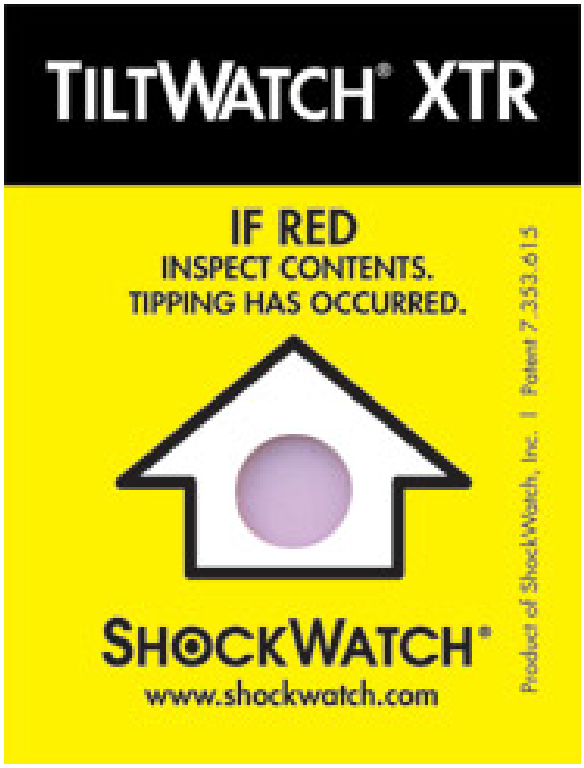
Figure 4: External Packaging



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



11 General Site Requirements

Topics:

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

11.1 System Environmental Requirements

The system based upon the drive maximum environmental specifications is 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

11.2 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.

11.3 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.

11.4 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

11.4.1 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.

11.5 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.

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12 Hardware Requirements

Topics:

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

12.1 Physical Dimensions

The following section provides a description of the physical dimensions.

12.1.1 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 4: Active Archive System Dimensions

12.1.2 Packed System Dimensions

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

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

Table 5: Packaged Active Archive System Dimensions

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.

12.1.3 Packed System Weight

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

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

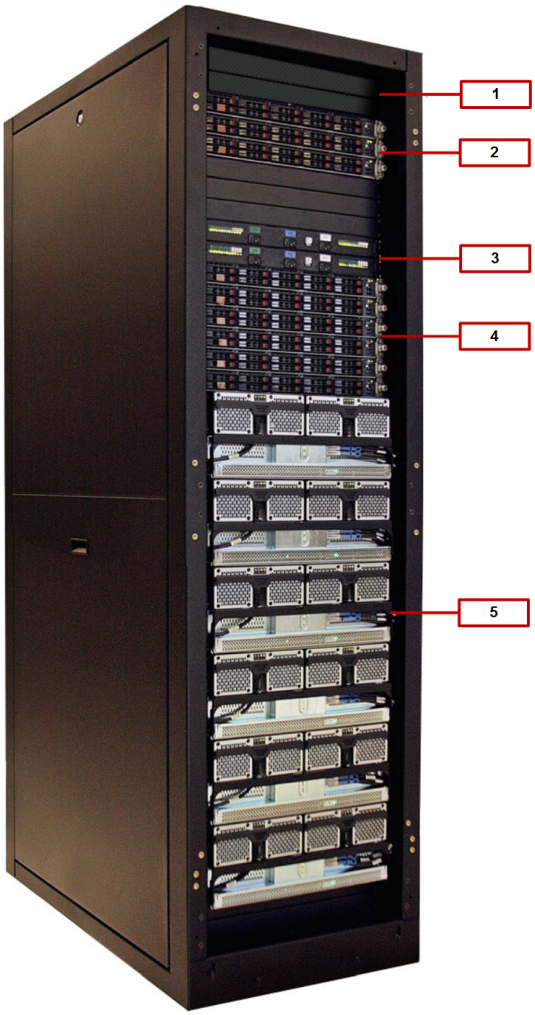
Table 6: Packaged Active Archive System Weight

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.

12.1.4 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

Hardware	Details	Number of Product
(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 7: Active Archive System Full Configuration

13 Site Preparation Specifications

Topics:

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

13.1 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.

13.2 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.

13.3 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:

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

Table 8: Floor Weight Support Requirements

13.4 Moving the Active Archive System

Do not move the unpacked Active Archive System using the pallet jack. This could cause major damage to the hardware. In order to move the Active Archive System to another location within the data center, please reload the system back onto the ramp before using the pallet jack. Before moving the system to another location, it is very

important that Masonite or a like material is utilized to cover the floor. This will help protect the flooring of the data center and allow for the pallet jack to avoid cracks and crevices.

Warning: Lack of floor coverings may result in the pallet jack get caught in a crack and the system tipping or falling over.

Tip: If you are moving the system short distances, you may remove the side panels and carefully wheel the system to the new location. It is highly recommended that you place floor protection down in either instance.

13.5 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 9: 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 10: Active Archive System Power Cords

14 Inspecting the Active Archive System

Topics:

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

14.1 Inspecting the Active Archive System after Transit

Note: Ensure that you inspect the hardware immediately after it has been unloaded from the truck.

To inspect the Active Archive System after transit, do the following:

1. Check the pallet for physical damage.
2. Check the cardboard coverings for physical damage.
3. Check the ShockWatch indicator for damage results.

   Note: If the indicator is red, take note in the Bill of Lading and inspect the system carefully.

4. Check the TiltWatch indicator for damage results.

   Note: If the indicator is red, take note in the Bill of Lading and inspect the system carefully.

5. Inspect all components and handles for damage and/or movement.

   Note:

   - Take note and report all issues and damage within the Bill of Lading.
   - Inspection by carrier must be accomplished within 15 business days of delivery.

15 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.

15.1 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

15.2 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.

16 Unpacking the Active Archive System

Topics:

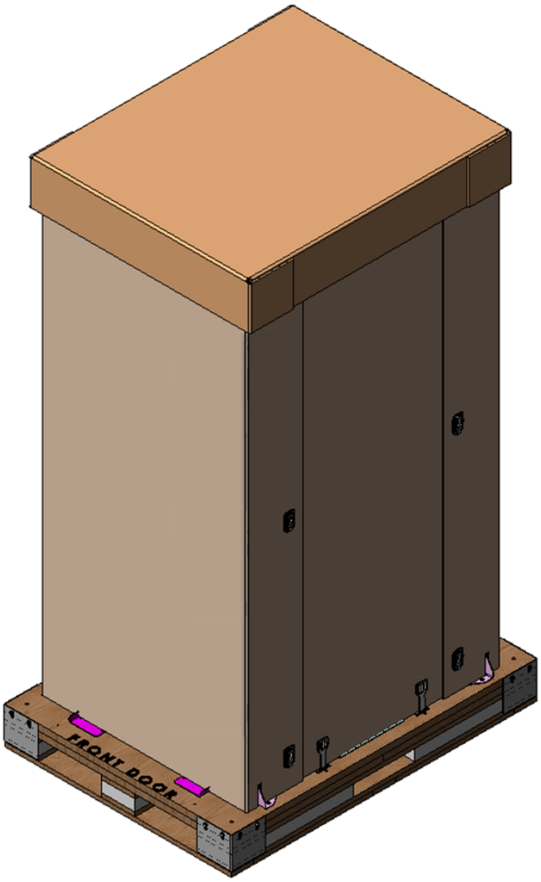
The following chapter provides instruction on how to unpack the Active Archive System.

16.1 Unpacking the Active Archive System

To unpack the Active Archive System, do the following:

1. Cut the plastic bands holding the top cap to the cardboard panels.
2. Remove the **top cap** from the cardboard panels.

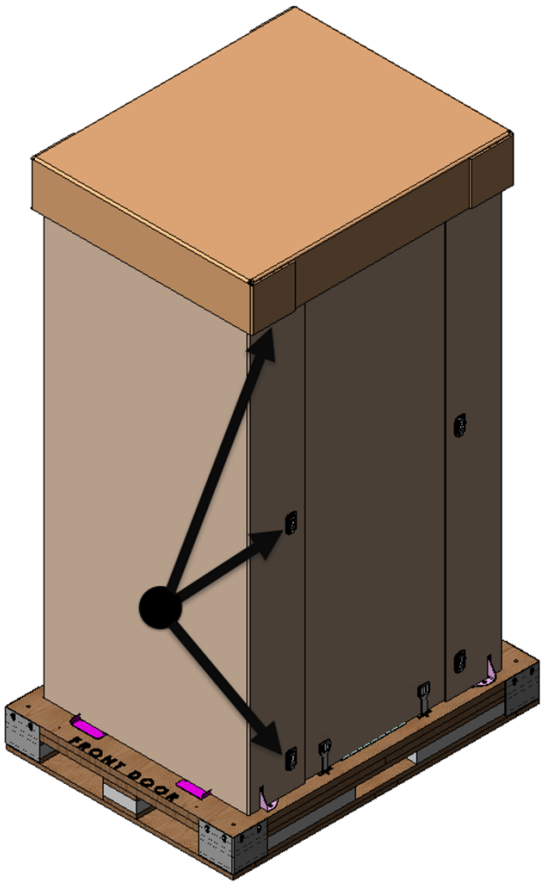
Figure 8: Top Cap



3. Remove front and rear panels by unlocking **plastic clips**.

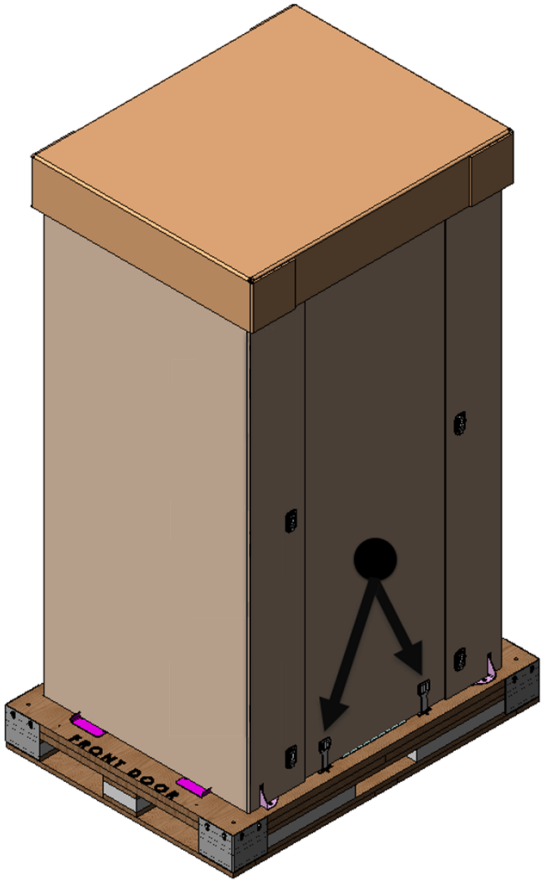
Note: The front is indicated by the **FRONT** marking on the pallet.

Figure 9: Front and Rear Plastic Clips



4. Remove side panels by unlocking **plastic clips** that are mounted to the pallet.

Figure 10: Pallet Plastic Clips

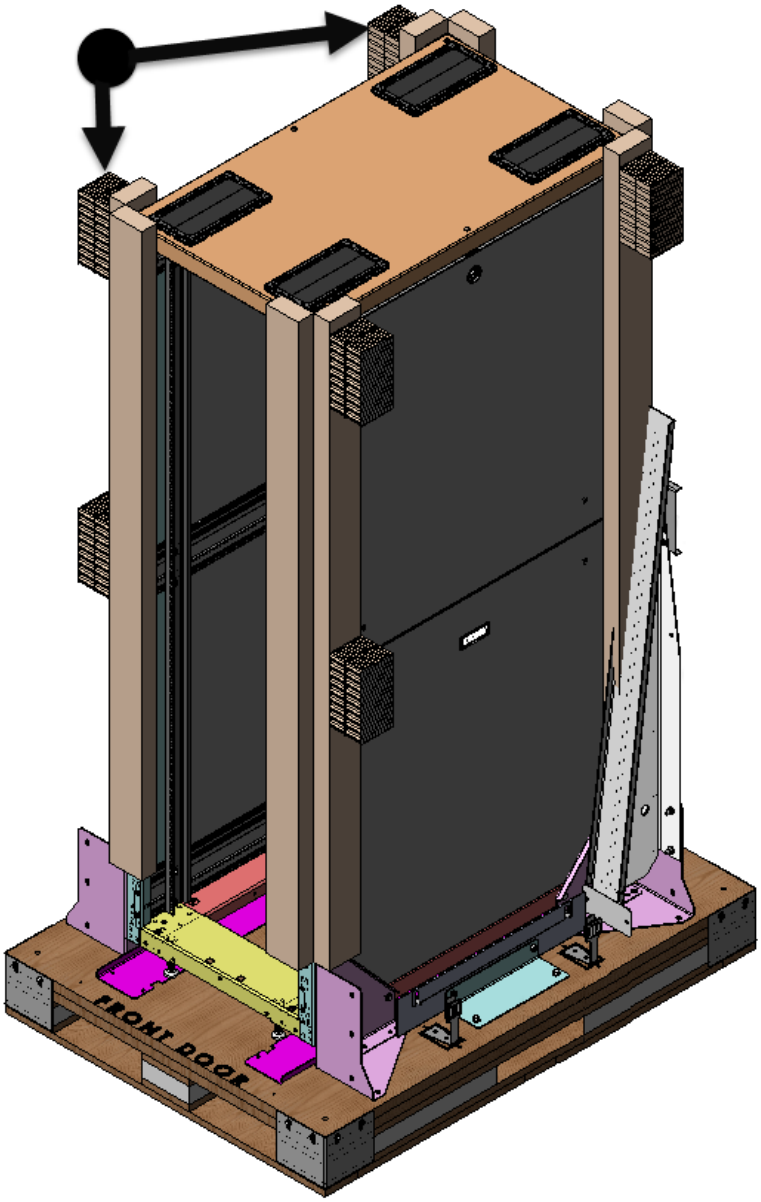


Once the panels are removed, the internal packaging is exposed.

5. Remove internal **cardboard corners**.

Note: There are four cardboard corners in all.

Figure 11: Pallet Plastic Clips



6. Pull the **poly bag** from the top of the system until it completely removed from the system.

17 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.

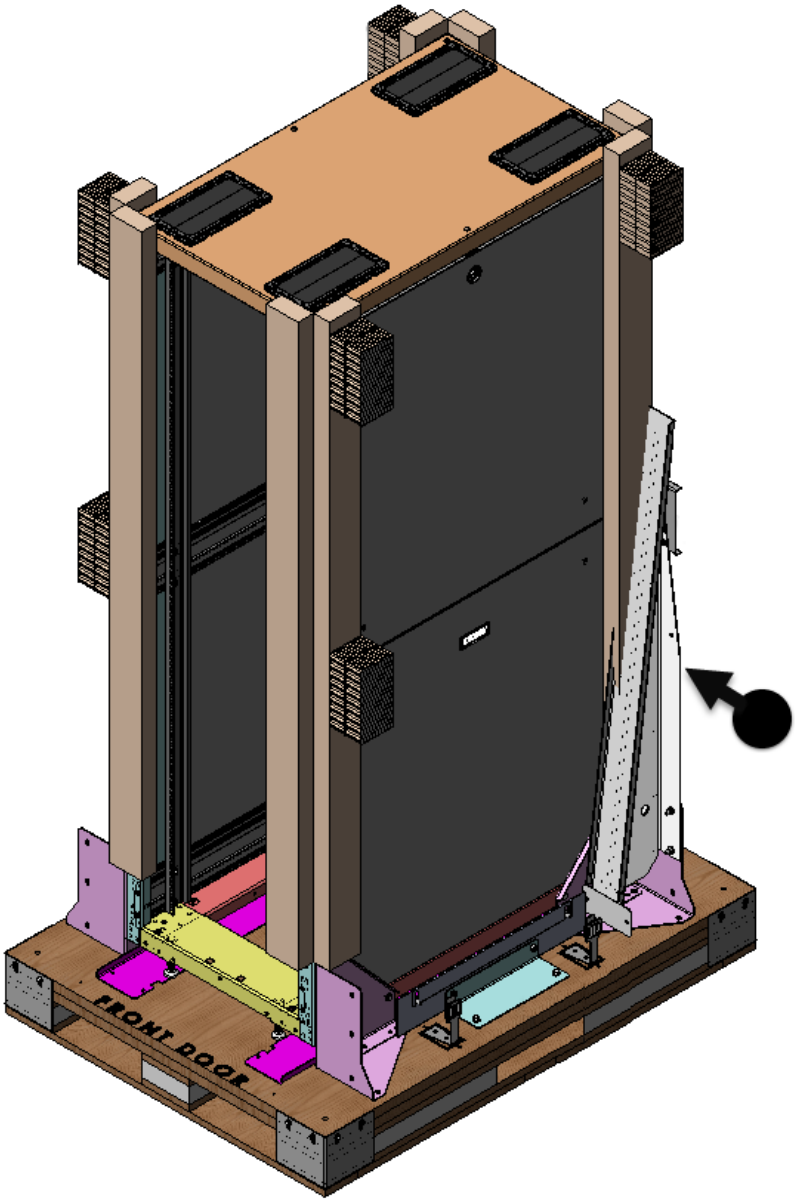
17.1 Removing the Ramps from the System

To remove the ramps from the pallet and system, do the following:

Drill
Socket adapter for drill
10 millimeter socket

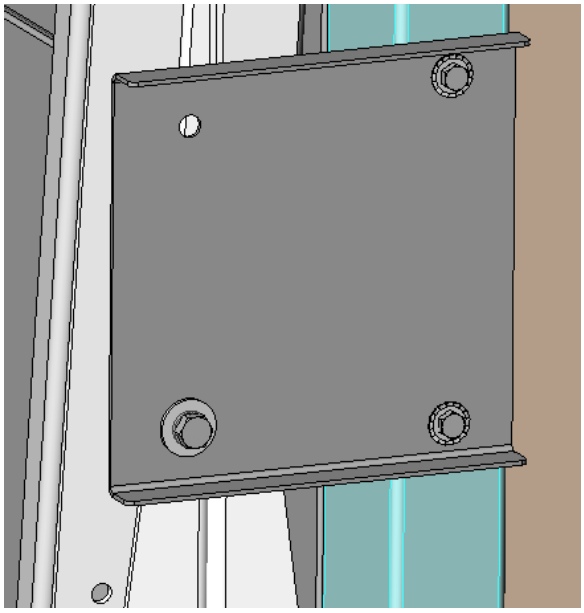
Table 11: Tools Required for this Task

Figure 12: Mounted Ramps



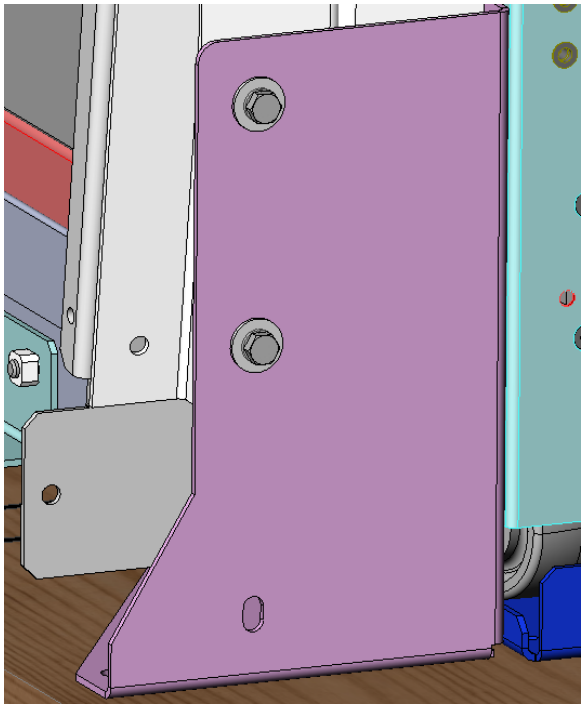
1. From the ramp mount bracket, use the **10 millimeter** socket, to remove **1** M6 bolt.

   Figure 13: Ramp Mount Bracket

2. From the pedestal cones use the **10 millimeter** socket, to remove **2** M6 bolts.

   Figure 14: Pedestal Cones

   Place the detached ramp in a safe location until the second ramp has been removed.
3. Completely remove the bolts from the ramps and hardware.
4. To remove the second ramp, repeat the previous steps.

Note:

- Removing the ramps requires removing **6** bolts total.

- It is recommended to leave the **ramp mount brackets** on as handles for moving the system into place.

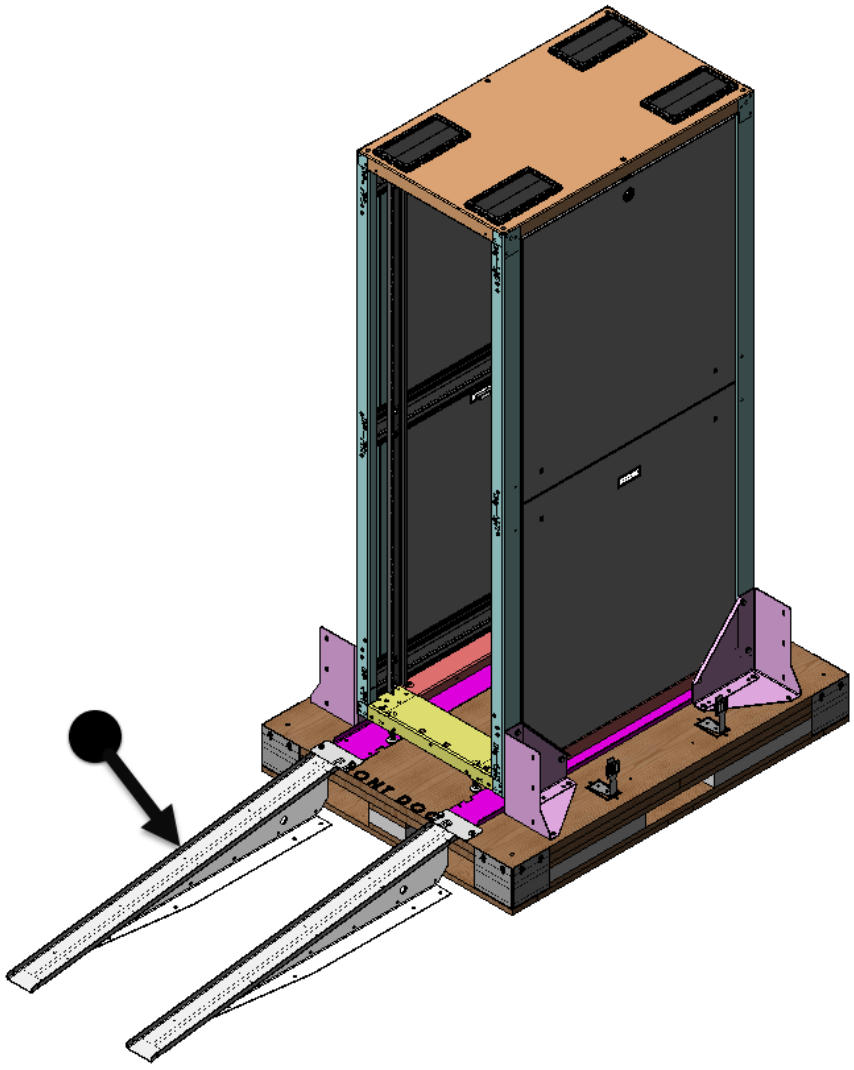
17.2 Attaching the Ramp to the Pallet

To attach the ramps to the pallet, do the following:

Drill
Socket adapter for drill
13 millimeter socket

Table 12: Tools Required for this Task

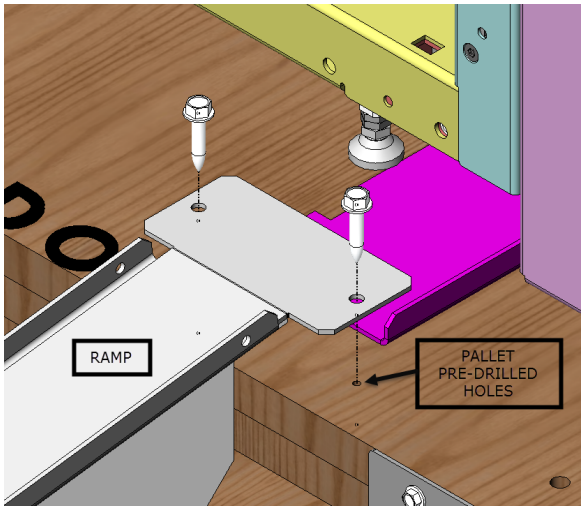
Figure 15: Attached Ramps



Note: The **4** M8 lag bolts used to attach the ramp to the pallet are included in a package attached to the system at the time of delivery.

1. From the front of the pallet, near the **FRONT DOOR** label, locate the **4** pilot holes.
2. Using the **13 millimeter** socket, attach the first ramp to the pallet with **2** M8 bolts.

Figure 16: Mounting the Ramps



3. Tighten the bolts until they are snug against the ramp.
4. To mount the second ramp, repeat the previous steps.

> **Note:** Attaching the ramps requires **4** bolts total.

5. Verify that both ramps are security attached to the pallet.

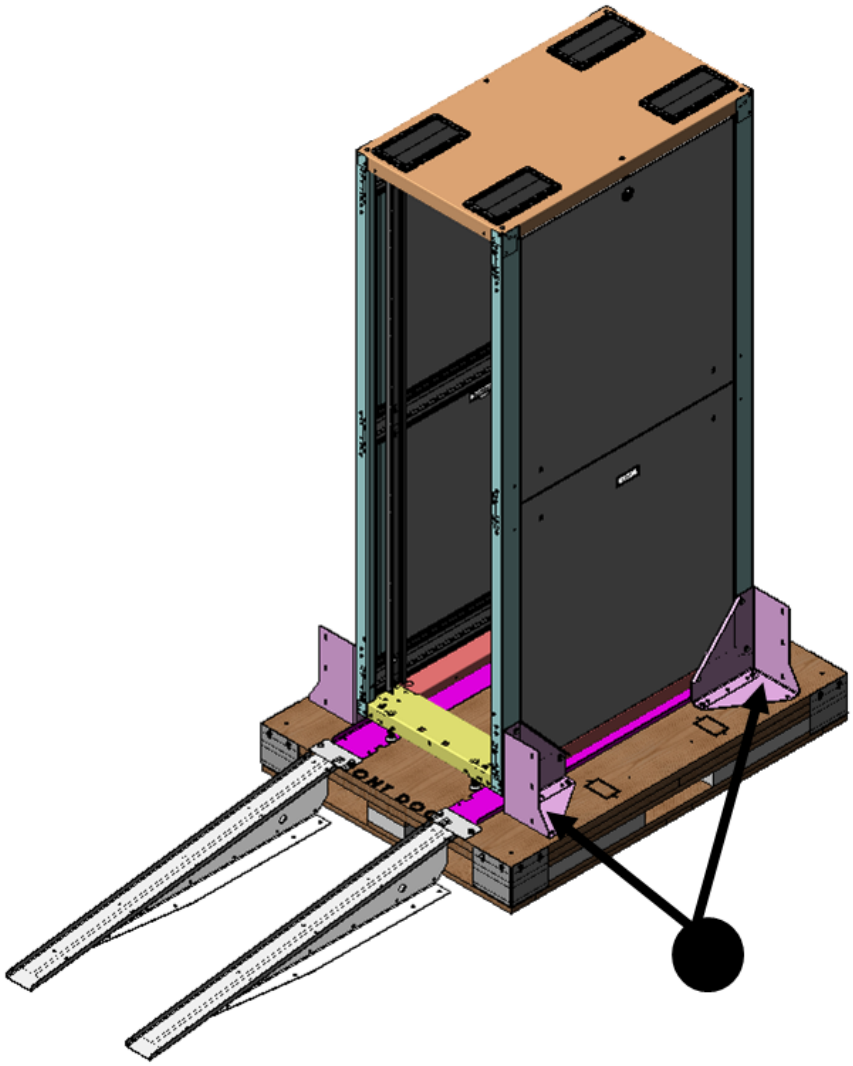
17.3 Removing the Pedestal Cones

To remove the pedestal cones from the pallet and system, do the following:

Drill
Socket adapter for drill
13 millimeter socket
9/16 inch socket

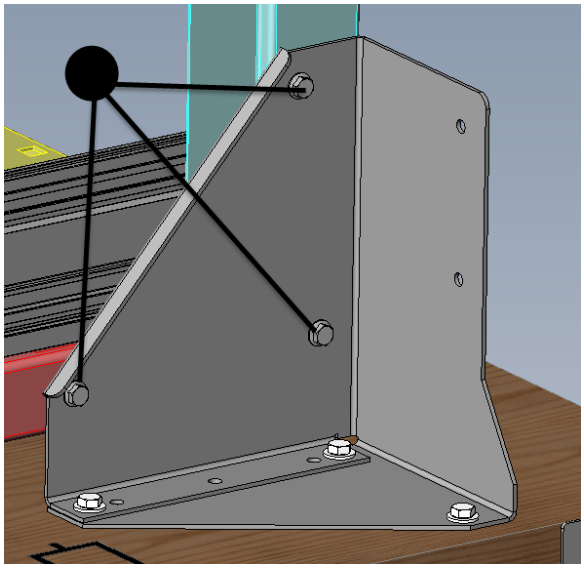
Table 13: Tools Required for this Task

Figure 17: Pedestal Cones



1. From the part of the pedestal cone attach to the system, use the **13 millimeter** socket, to remove **3** M8 bolts.

Figure 18: Pedestal Cones (System)

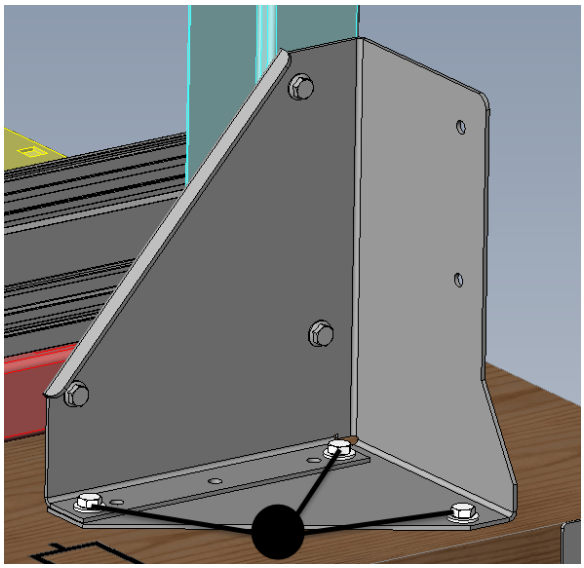


2. Completely remove the bolts from the pedestal cones.
3. To remove the other pedestal cones from the system, repeat the previous step.

> **Note:** Removing all **4** of the pedestal cones from the system, requires removing a total of **12** M8 bolts.

4. From the part of the pedestal cone attach to the pallet, use the **9/16 inch** socket, to remove **3** 3/8-16 bolts.

Figure 19: Pedestal Cones (Pallet)



5. Completely remove the bolts from the pedestal cones.
6. To remove the other pedestal cones from the pallet, repeat the previous step.

> **Note:** Removing all **4** of the pedestal cones from the pallet, requires removing a total of **12** 3/8-16 bolts.

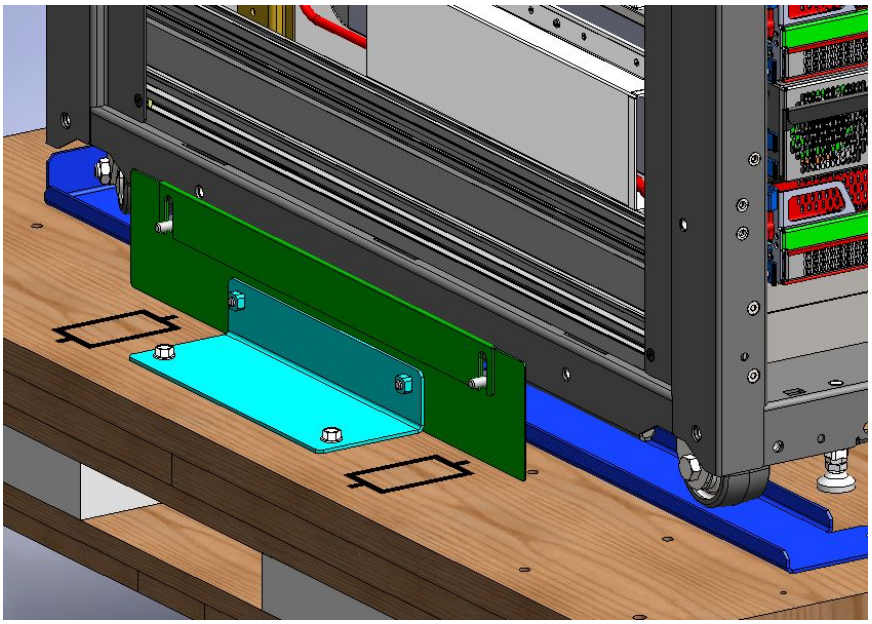
17.4 Removing the Floor Anchor Brackets

To remove the floor anchor brackets from the pallet and system, do the following:

Drill
Socket adapter for drill
13 millimeter socket

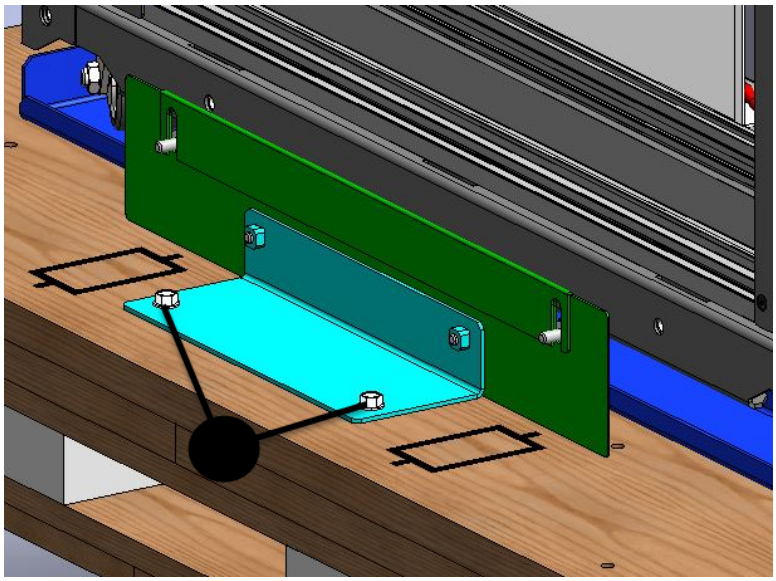
Table 14: Tools Required for this Task

Figure 20: Floor Anchor Brackets



1. From the right side of the system, use the **13 millimeter** socket, to remove **2** M8 bolts.

   Figure 21: Floor Anchor Brackets (System)



2. To remove the other floor anchor bracket from the system, repeat the previous step.

   Note: Removing both of the floor anchor brackets from the system, requires removing a total of **4** M8 bolts.

3. Completely remove the bolts from the floor anchor brackets.

   Note: You will need to keep the angle brackets and flat plates for seismic bracing.

17.5 Removing the Active Archive System from the Pallet

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

None

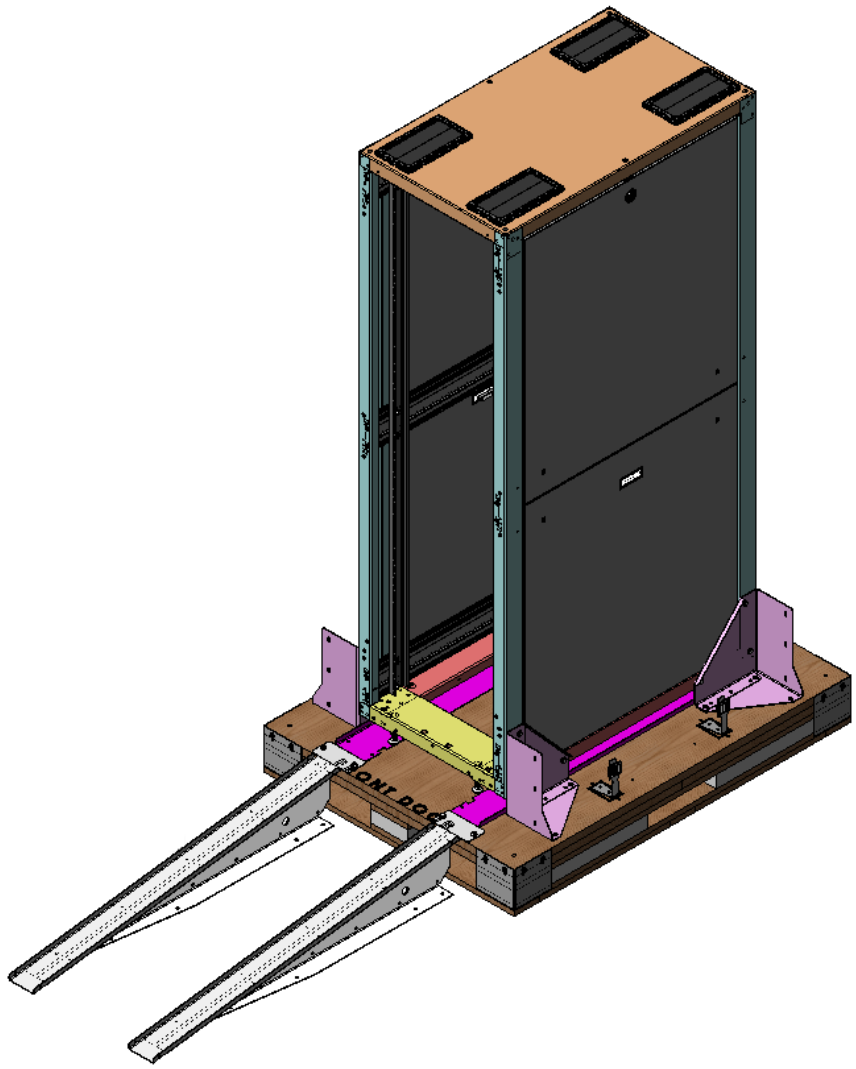
Table 15: Tools Required for this Task

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 22: 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 23: Swivel Casters

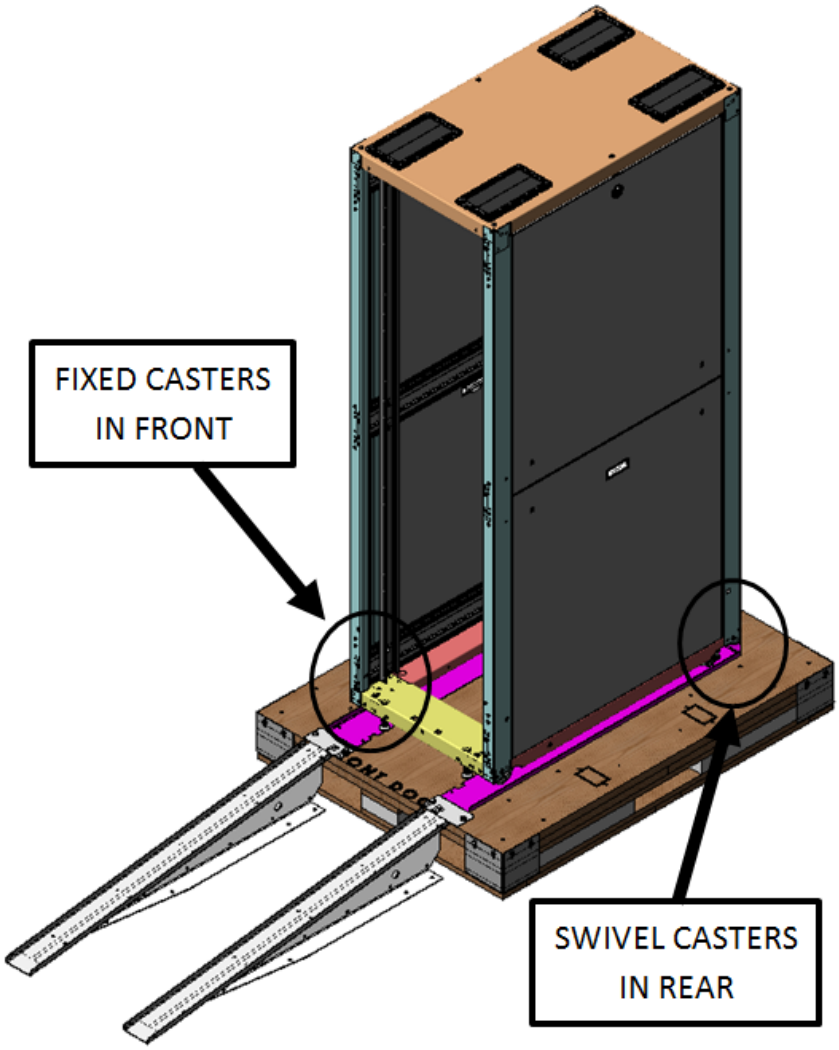
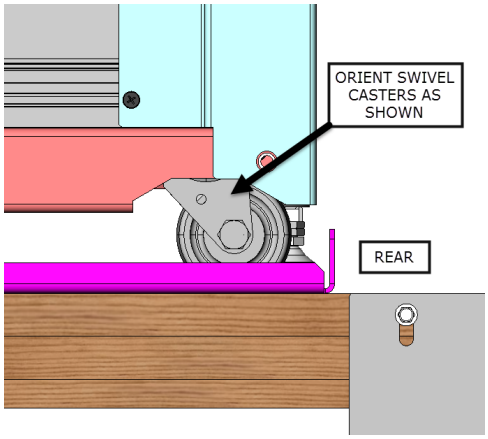


Figure 24: Swivel Casters Close View



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.

18 Installing the Active Archive System Hardware

Topics:

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

18.1 Attaching the Floor Anchor Brackets to the System

To attach the floor anchor brackets to the system, do the following:

Attention: The Active Archive System is not designed to resist vigorous earthquakes. The floor anchor bracing mitigates potential damage caused by seismic activity, but does not guarantee full protection of the system and internal components.

Drill
Socket adapter for drill
13 millimeter socket
Crescent wrench
Level
Tape measure

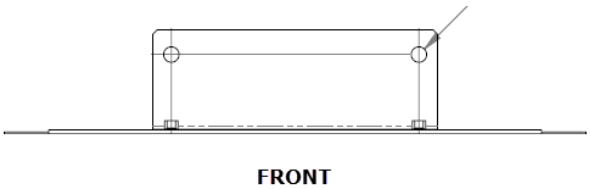
Table 16: Tools Required for this Task

Note: Locate the pair of floor anchor brackets that were removed from the system during the unloading process. The floor anchor brackets contain the combination of the angle brackets and flat plates connected by bolts. Ensure that you disassemble the angle brackets from the flat plates.

Attention: The data center is responsible for ensuring that the 1/2 inch threaded rods are installed to the specification mentioned in the Site Survey.

1. Using a **13 millimeter** socket, mount the front angle bracket to the data center floor with **2** M8 bolts.

Figure 25: Front of Rack Angle Bracket Position

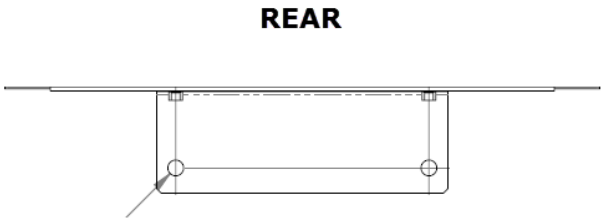


Note:

- The angle brackets should be facing towards the inside of the installation space.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

2. Using a **13 millimeter** socket, mount the rear angle bracket to the data center floor with **2** M8 bolts.

Figure 26: Rear of Rack Angle Bracket Position



Note:

- The angle brackets should be facing towards the inside of the installation space.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

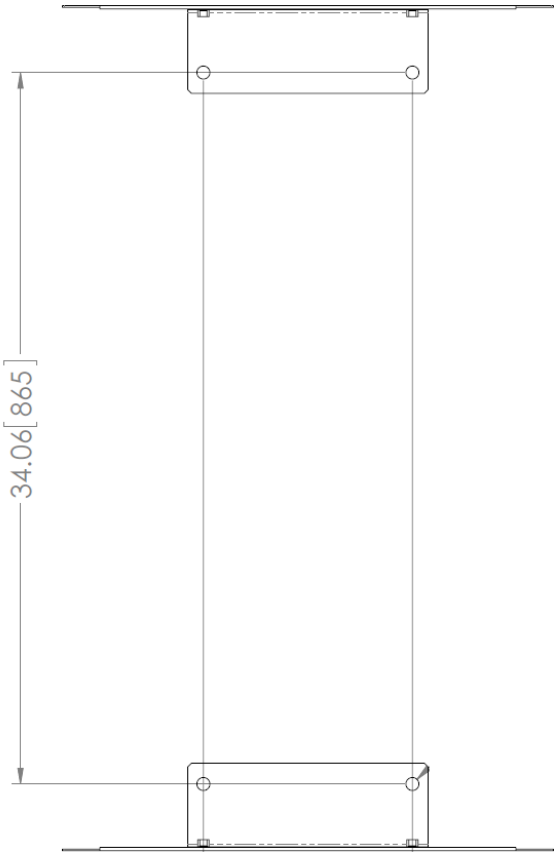
3. Move the rack into place over the angle brackets, ensuring that there is one angle bracket at the front and one at the rear of the rack.

Note:

- From the front of the system, firmly grip the rack frame and ramp mount brackets. 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.

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

Figure 27: Angle Brackets Position

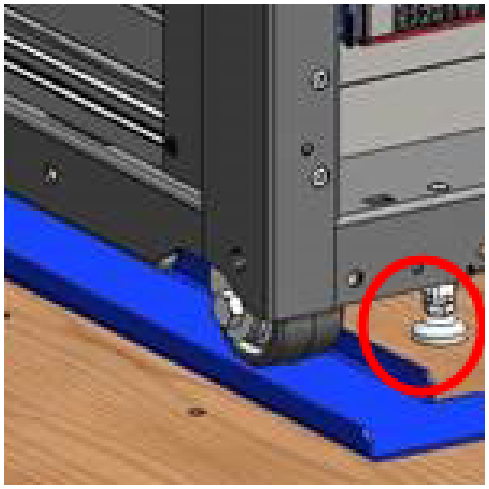


Note:

- From the front of the system, firmly grip the rack frame and ramp mount brackets. 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.
- Ensure that you take necessary precaution so as not to damage any components on the system or any existing systems within the installation space.

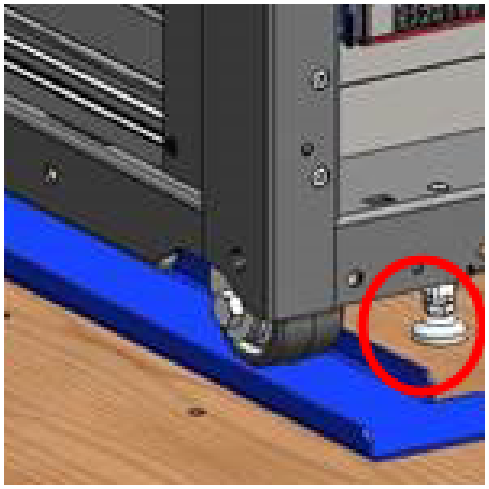
4. From the bottom front of the rack, using a crescent wrench, rotate one of the rack feet **clockwise**.

Figure 28: Rack Feet



5. Once the first caster is slightly off of the ground, repeat the previous step on the other side.
6. From the bottom rear of the rack, using a crescent wrench, rotate one of the rack feet **clockwise**.

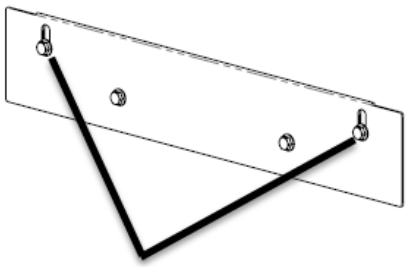
Figure 29: Rack Feet



7. Once the caster is slightly off of the ground, repeat the previous step on the other side.
8. Repeat the **4** previous steps until each caster is about 3/16 inch from the floor.
9. Using the level, verify the level of the rack.
10. Adjust the rack feet according to the level, keeping the distance from the bottom of the casters to the floor as close to 3/16 inch as possible.

11. Using a **13 millimeter** socket, mount the front flat plate to the system with **2** M8 bolts.

Figure 30: Flat Plate Attached (Front)

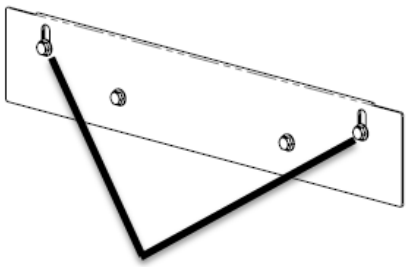


Note:

- The rack contains weld nuts that accept the flat plate bolts.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

12. Using a **13 millimeter** socket, mount the rear flat plate to the system with **2** M8 bolts.

Figure 31: Flat Plate Attached (Rear)

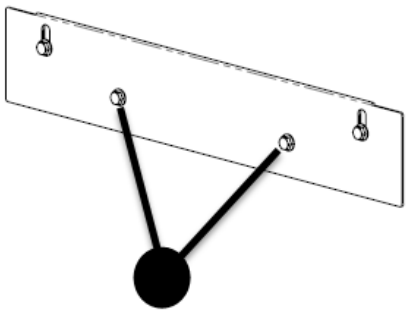


Note:

- The rack contains weld nuts that accept the flat plate bolts.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

13. Using a **13 millimeter** socket, connect the front flat plate to the angle bracket with **2** M8 bolts.

Figure 32: Flat Plate and Angle Bracket Attached (Front)

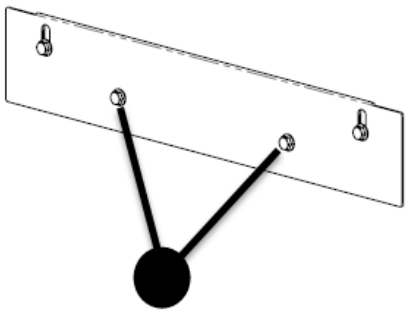


Note:

- The angle bracket contains weld nuts that accept the flat plate bolts.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

14. Using a **13 millimeter** socket, connect the rear flat plate to the angle bracket with **2** M8 bolts.

Figure 33: Flat Plate and Angle Bracket Attached (Rear)



Note:

- The angle bracket contains weld nuts that accept the flat plate bolts.
- Bolts should be tightened to a torque value of 212 In-Lb or 24 N-M.

19 Inspecting the Active Archive System

Topics:

The following chapter displays inspection recommendation of the Active Archive System will be installed.

19.1 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.

20 Site Checklists

Topics:

The following chapter displays the checklists for the site where the Active Archive System will be installed.

20.1 Site Inspection Checklist

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

No.		Yes	No	Comment or Date
Facility				
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?			

No.		Yes	No	Comment or Date
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?			
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?			

Table 17: Inspection Checklist

20.2 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.

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 18: Delivery Checklist

Notes:

Table 19: Additional Notes

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