EcoDesign Disclosures

Ultrastar® Serv60+8
Regulatory Model H4060-S
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September 2021

Western Digital.

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Revision History

Date	Revision	Comment
February 2020	1.0	Initial release
March 2020	1.1	Updated the Notices section
September 2021	01	Changed document number from 1ET2155 to D018-000246-000

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EU EcoDesign Disclosures

This document provides information and instructions related to the Ultrastar Serv60+8 's disclosures for the EU's ecodesign requirements.

In This Chapter:

- EcoDesign Overview.....2
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1.1 EcoDesign Overview

This document provides information about the Ultrastar Serv60+8 related to its manufacturing and operation, and instructions for secure data deletion and disassembly.

1.2 Ultrastar Serv60+8 EcoDesign Specifications

Product Type	Resilient Server
Manufacturer's Name	Western Digital
Manufacturer's Registered Trade Name	Western Digital®
Manufacturer's Registered Trade Address	5601 Great Oaks Parkway San Jose, CA 95119 USA
Product Model Number	**H4060-S**
Starting Year of Manufacture	2018[1]
PSU efficiency at 20%, 50%, 100% of rated output power	20% load = 90% 50% load = 94% 100% load = 91%
Power Factor at 50% Rated Load Level	Minimum Power Factor = 0.95
Declared Operating Condition Class	A2
Neodymium Content in HDDs	5g to 25g (for drive models HC310, HC320, HC510, HC520, and HC530)
Cobalt Content in Batteries	Less than 5g

1.3 Instant Secure Erase / Secure Erase

This section provides conceptual information and instructions for using the Instant Secure Erase (ISE) or Secure Erase (SE) features included with Western Digital drives.

Data Erasure Options

Western Digital provides several options for securely erasing data from its drives. The appropriate method depends upon many factors, including the following:

- Erase Configuration (ISE or SE)
- Drive Type (HDD or SSD)
- Interface Type (SAS, SATA, or NVMe™)
- Encryption (none, TCG, or FIPS)

1. This value is the original date of product manufacture. For the specific manufacture date of your platform, check the agency label attached to the platform. There will be a 4 digit date code on that label.

For more information on the `sanitize` command for specific drive models, please see the drive model's specification, contact Western Digital technical support, or download the following whitepaper for details: https://documents.westerndigital.com/content/dam/doc-library/en_us/assets/public/western-digital/collateral/tech-brief/tech-brief-instant-secure-erase....

ISE / SE Overview

Instant Secure Erase (ISE) is Western Digital's implementation of the industry standard T10 (SAS)/T13 (SATA) `sanitize` command, allowing users to instantly erase both user-accesible data and hidden user data from Western Digital drives.

The `sanitize` command supports three options:

1. **Crypto Scramble (SATA) / Crypto Erase (SAS)**: deletes the encryption key of a self-encrypting drive.
2. **Overwrite (HDDs)**: overwrites the data on the drive with a supplied value.
3. **Block Erase (SSDs)**: electrically erases each storage element by modifying their voltage levels.

Secure Erase (SE) is a subset of ISE, where the *Crypto Scramble / Erase* option has been disabled, allowing only the *Overwrite* or *Block Erase* options.

Requirements

To perform secure deletion, the following versions are the minimal recommended/supported utilities for each drive interface required on the host. For other versions, please verify the arguments/parameters in the appropriate man pages.

- **SAS**: sg_sanitize version 1.00 20151219 (included in sg3_utils 1.42[2])
- **SATA**: hdparm version 9.58
- **NVMe**: nvme-cli version 1.6

Erase Methods

The following methods cover all erasure options and storage technologies for Western Digital drives. For more information on the `sanitize` command for specific drive models, please see the drive model's specification.

Note: If a RAID adapter or software is in use, remove the drives from a RAID set before erasure.

Note: If a drive is encrypted (TCG or FIPS), unlock the drive before executing any `sanitize` commands.

Note: In the following commands, replace the generic reference of `<dev>` with the specific device reference appropriate for your operating system (i.e. `sgX` for Linux, `SCSIX:X,X,X` for Windows).

SAS

Note: In the following `sg_sanitize` commands, the `--quick` option starts the deletion immediately. If the `--quick` option is not specified, the drive's `inquiry` response strings are printed in case the wrong device has been specified, and the user is given 15 seconds to reconsider whether they wish to erase all the data on the drive.

2. For details on how to use the sg3_utils v1.42 utility, visit http://sg.danny.cz/

- ISE - Crypto Erase - HDD/SSD:

```
# sg_sanitize --crypto --quick <dev>
```

- SE - Overwrite - HDD:

```
# sg_sanitize --overwrite --quick --zero <dev>
```

- Block Erase - SSD:

```
# sg_sanitize --block --quick <dev>
```

SATA

- ISE - Crypto Erase - HDD/SSD:

```
# hdparm --yes-i-know-what-i-am-doing --sanitize-crypto-scramble <dev>
```

- SE - Overwrite - HDD:

```
# hdparm --yes-i-know-what-i-am-doing --sanitize-overwrite hex:11111111 <dev>
```

- Block Erase SSD:

```
# hdparm --yes-i-know-what-i-am-doing --sanitize-block-erase <dev>
```

NVMe

-

```
# nvme format –s <option> /dev/<nvme_namespace>
```

Note: The `-s` option triggers Secure Erase mode.

```
Value    Definition
0        No secure erase operation requested
1        User Data Erase: All user data shall be erased, contents of the
         user data after the erase is indeterminate (e.g., the user data
         may be zero filled, one filled, etc). The controller may
         perform a cryptographic erase when a User Data Erase is
         requested if all user data is encrypted.
2        Cryptographic Erase: All user data shall be erased
         cryptographically. This is accomplished by deleting the
         encryption key.
```

1.4 Ultrastar Serv60+8 Disassembly

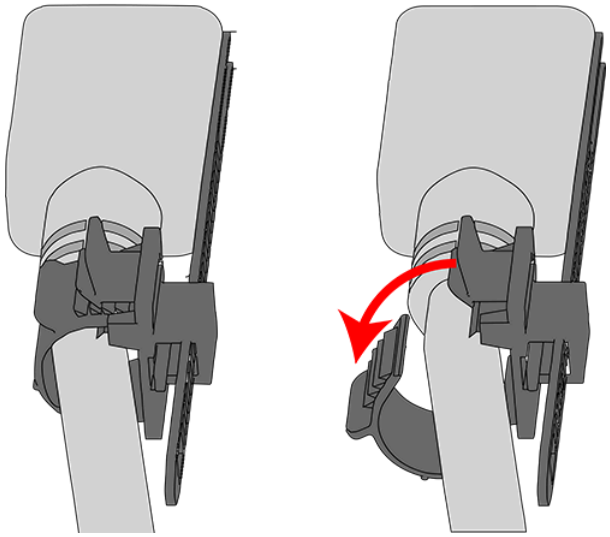
This task provides instructions for disassembling an Ultrastar Serv60+8 to meet the EU's ecodesign requirements.

Table 1: Procedure Requirements

Required Tools	# of People Required	Time Required
T7, T8, T10. T30 Torx Screwdrivers #1 Phillips Screwdriver Tweezers	2[3]	3 hours

Step 1: From the rear of the enclosure, detach the retention clip from the PSU cable and remove the cables from the PSUs.

Figure 1: Cable Retention Mechanism



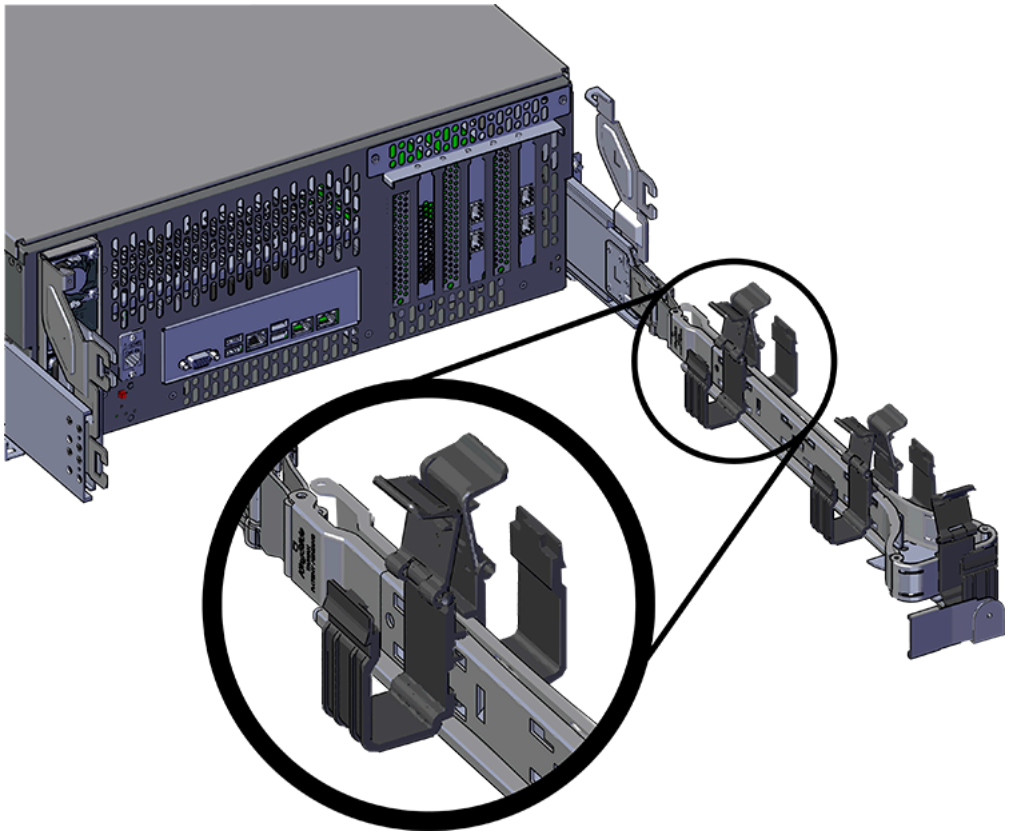
Step 2: Disconnect the remaining cables from the rear of the enclosure.

Step 3: Uncable the CMA(s).

a. Open all of the basket clips on the CMA(s).

3. Two people required for lifting enclosure; only one required for disassembly

Figure 2: Open Baskets



b. Remove one cable at a time from the arm, making sure not to put too much strain on the arm.

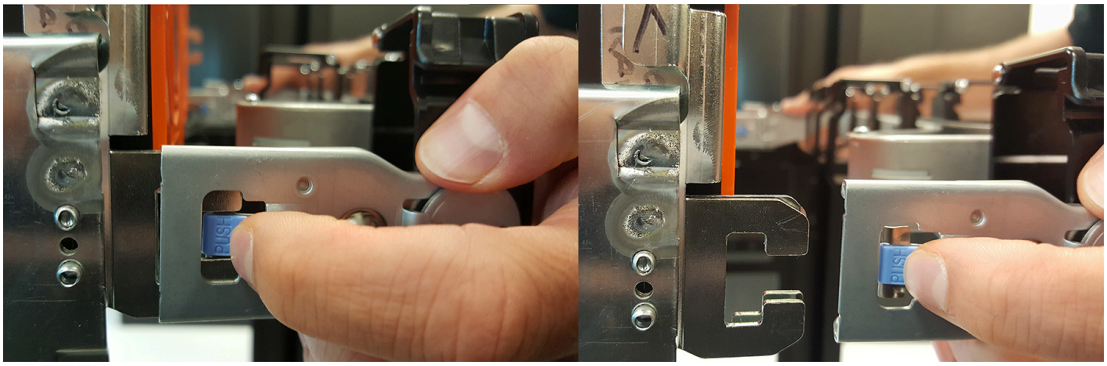
Step 4: Remove the CMA(s).

a. Release all of the connectors that attach the CMA(s) to the enclosure and the rail.

There are three total connections that need to be released, one at the elbow and two at the opposite end.

b. To release a connector, press the blue latch release button and pull the connector free.

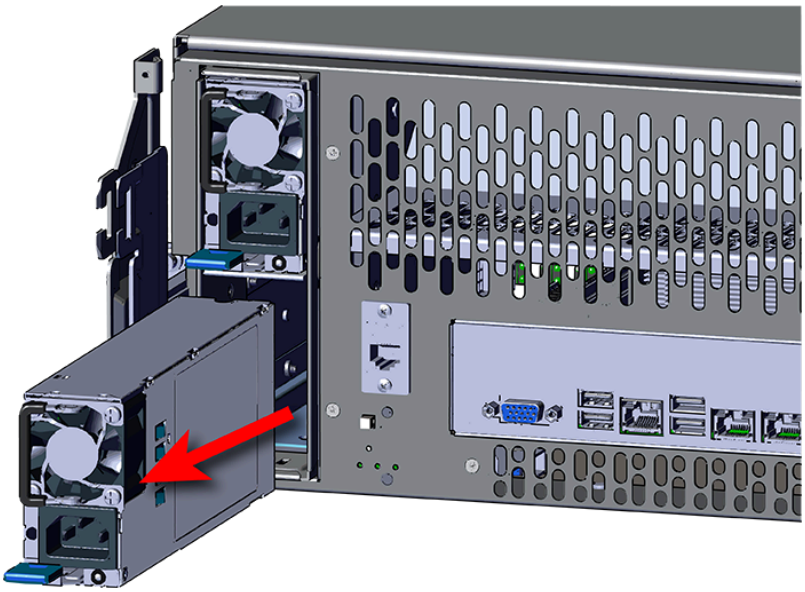
Figure 3: Unlatching a CMA Connector



Step 5: Uninstall the PSU.

a. Grasp the release lever and the metal handle in a downward pinching motion to release the latching mechanism.

Figure 4: Uninstalling the PSU

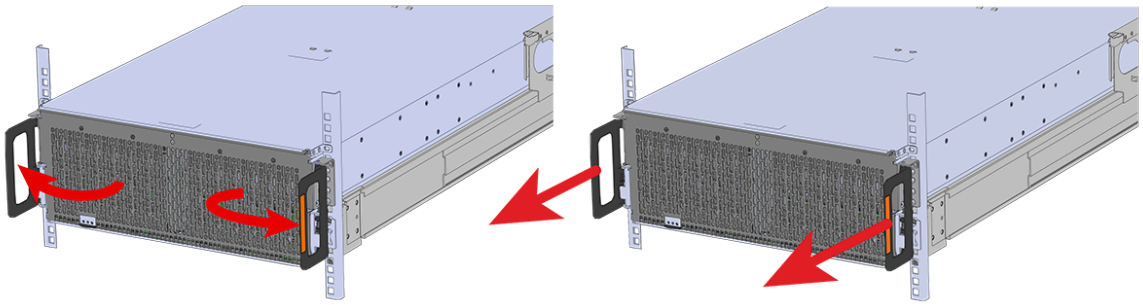


b. Pull the PSU straight out with even pressure.

Step 6: Uninstall the remaining PSU in the same manner as the first.

Step 7: Grasp both handles at the front of the enclosure and pull with even pressure to extend the chassis out of the rack until it is stopped by the safety latches. The safety latches will prevent the enclosure from coming out of the rack completely and the cover will remain in the rack attached to the rear alignment brackets.

Figure 5: Chassis Handle Operation



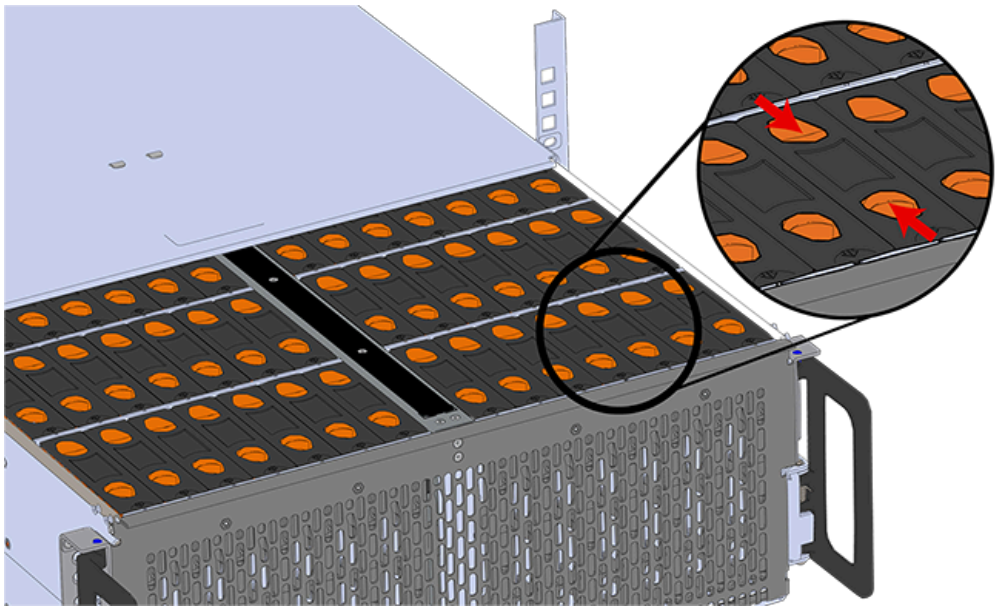
Step 8: Remove all of the drives from the chassis before uninstalling the chassis. Be prepared to label the drives as they are removed so they can be reinstalled in the same location in the new chassis.

Step 9: Follow these steps to remove a 3.5in HDD Assembly.

a. Find the latch release mechanism on the 3.5in HDD Assembly being removed.

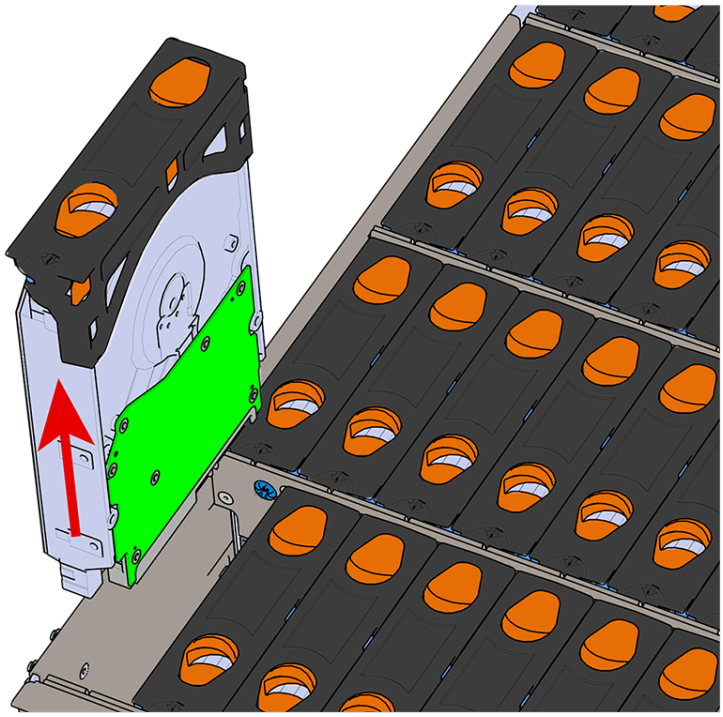
b. Insert a finger and a thumb into the latch release and pinch to unlatch the 3.5in HDD Assembly.

Figure 6: Unlatch Drive Carrier (IOM Not Shown)



c. Lift the 3.5in HDD Assembly free from the enclosure.

Figure 7: Removing 3.5in HDD Assembly

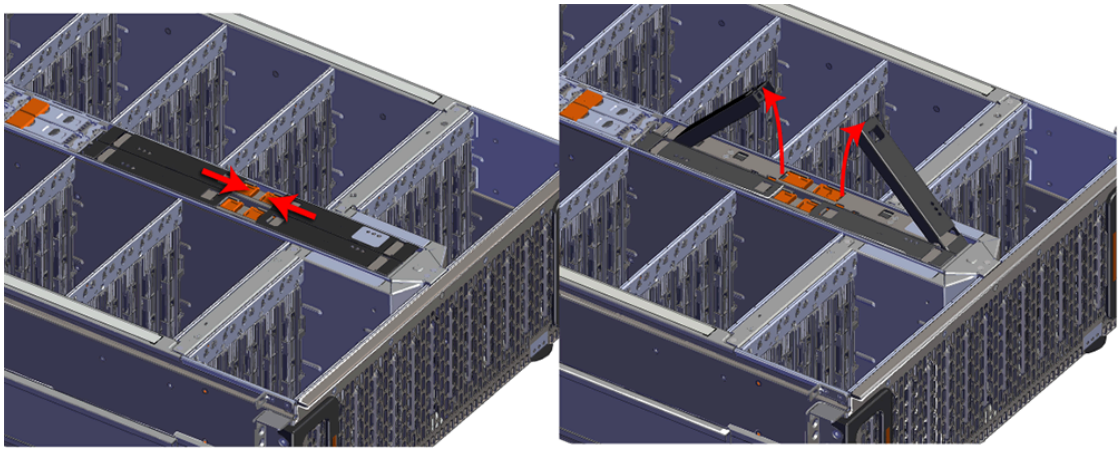


Step 10 : Follow the previous step for each drive in the enclosure. Store the drives in an ESD safe location.

Step 11 : Uninstall the IOM.

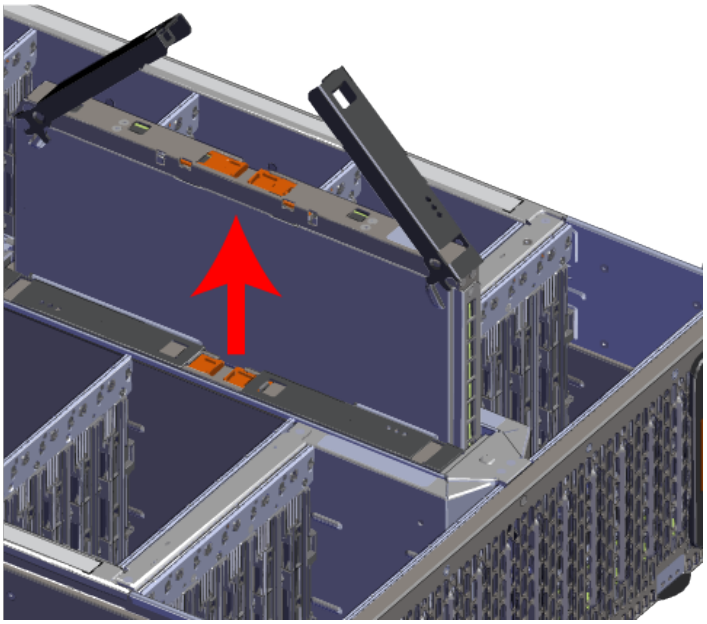
a. Locate the latch release on the IOM and press it in the direction shown in the following image.

Figure 8: Unlatching the IOM



b. Grasp both handles, one handle in each hand, and lift evenly with both hands to ensure the IOM comes out straight. This will prevent any damage to the pins on the internal connectors.

Figure 9: Removing IOM



Step 12: Uninstall the IOM in the same manner as the IOM. The IOM blank is installed in the slot next to the IOM.

Step 13: Grasp both handles at the front of the enclosure and pull with even pressure to extend the chassis out of the rack until it is stopped by the safety latches. Make sure that the top cover comes with the chassis as it is extended out of the rack. The safety latches will prevent the enclosure from coming out of the rack completely.

Step 14: Remove the chassis from the rack.

- **a.** Be prepared to support the enclosure once it is free of the rails by having a second person or a lift to support the enclosure
- **b.** Grasp both handles at the front of the enclosure and pull with even pressure until the enclosure will not extend further.
- **c.** Locate the safety catches on the inner rails attached to the enclosure.

Figure 10: Safety Latch Release

d. Depress the latch release lever for the safety latches on the rail and push the chassis very slightly forward. The chassis is now unsecured from the rack.

e. Ensure that you have the proper support mechanism to hold the chassis in position, whether that be a team lifting partner or an appropriate lift.

f. Slide the chassis forward to free it from the rails. Place the chassis in a safe location to avoid damage.

Step 15: Uninstall the internal Rear Fan.

a. Lift the Rear Fan flap and insert a finger into the service hole on the top of the Rear Fan and pull up to release the latch.

Figure 11: Lift the Rear Fan Flap

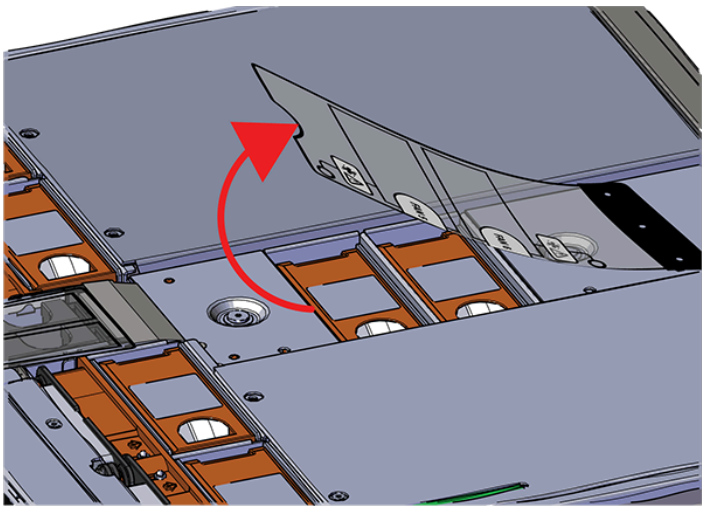
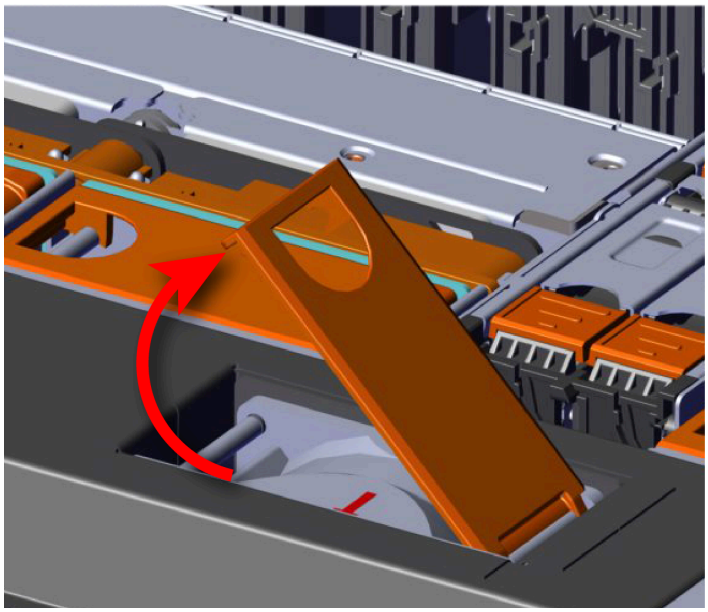
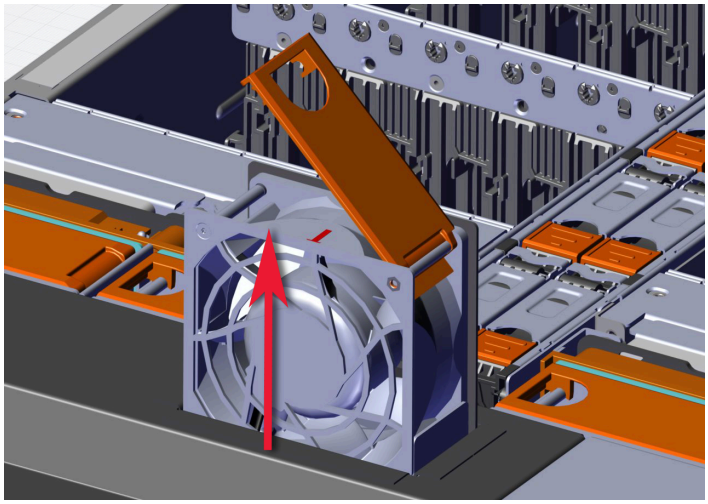


Figure 12: Unlatching Rear Fan



b. Use the handle to pull evenly on the component to remove it from the enclosure.

Figure 13: Removing Rear Fans



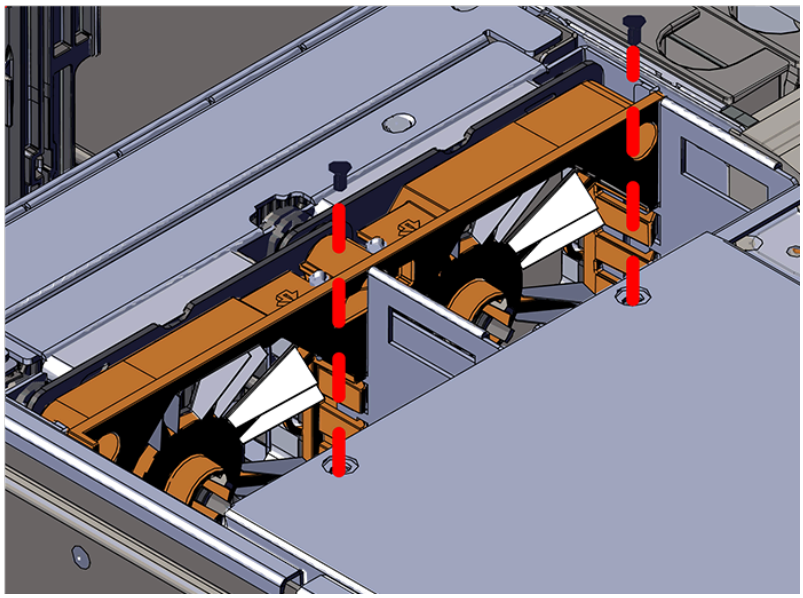
Step 16: Uninstall the rest of the system fans in the same manner as the first.

Step 17: Uninstall server cover panels.

a. Remove the screws that secure the server cover panels to the chassis using a T7 Torx screwdriver.

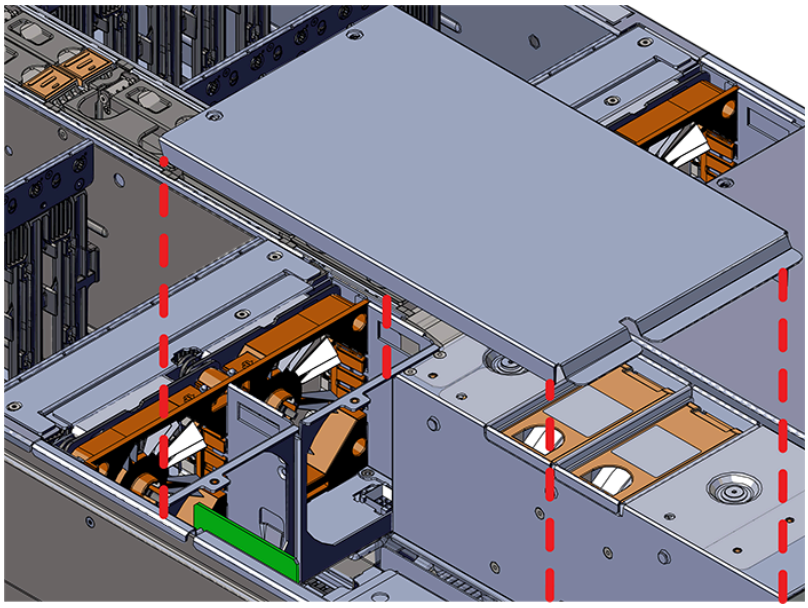
Note: When at the rear of the enclosure, the left server cover panel contains two T7 Torx screws. The left server cover panel contains only one T7 Torx screw.

Figure 14: Removing the Server Cover Panel Screws



b. Remove the server cover panel by carefully pulling on the edge where the screws were removed.

Figure 15: Removing the Server Cover Panel

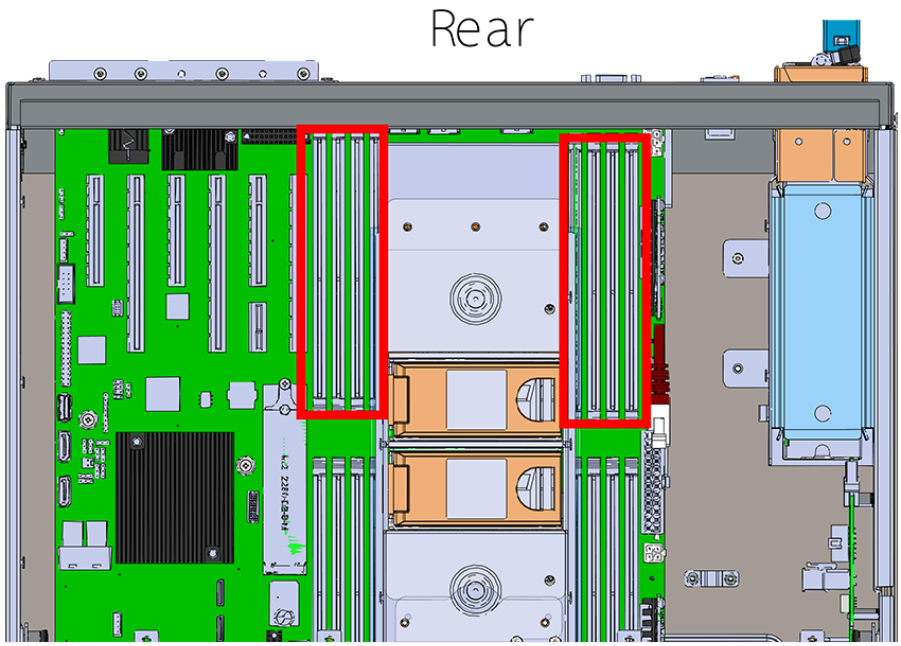


Step 18 : Uninstall the remaining server cover panel in the same manner as the first.

Step 19 : Uninstall the fan bay.

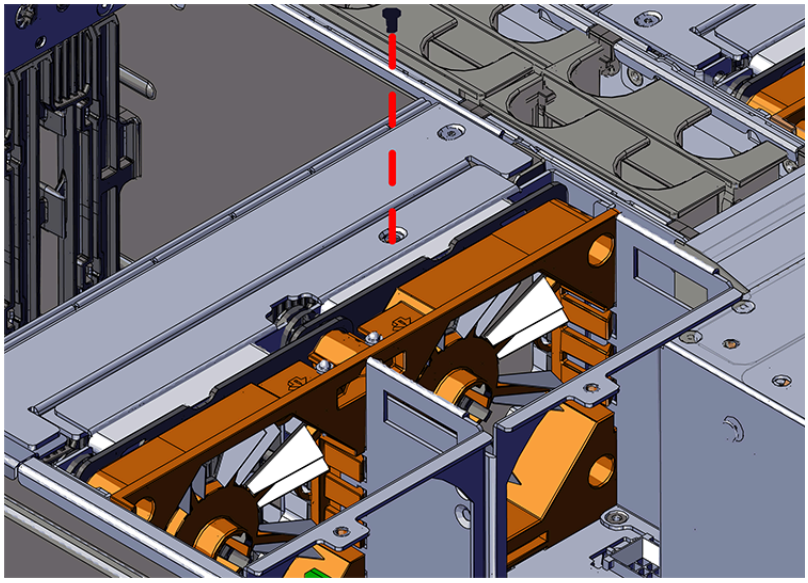
Note: The Fan Bays must be uninstalled to gain access to the DIMMs located closest to the front of the enclosure.

Figure 16: Rear DIMMs Location



a. Remove the screw that secures the fan bay to the chassis.

Figure 17: Removing the Fan Bay Screw



b. Locate the pin that secures the outside of the fan bay to the chassis and pull the pin out and pull up on the fan bay until the you have access to the cable that connects the fan bay to the baseboard. Disconnect the cable and pull the fan bay clear of the chassis.

Figure 18: Fan Bay Pin

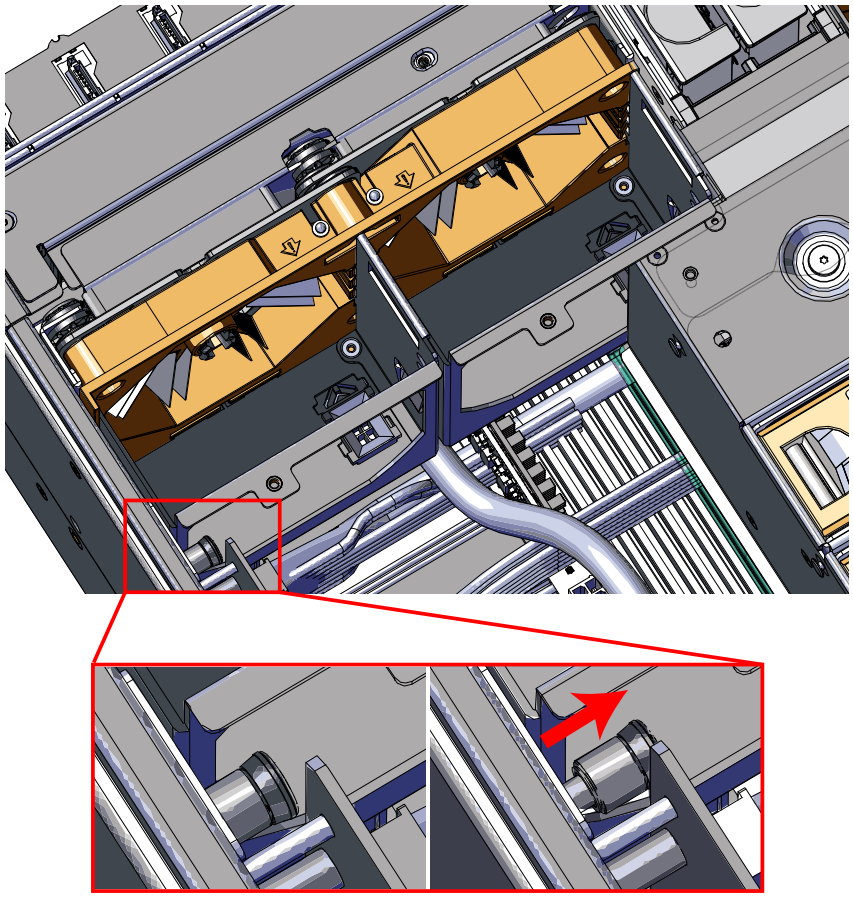
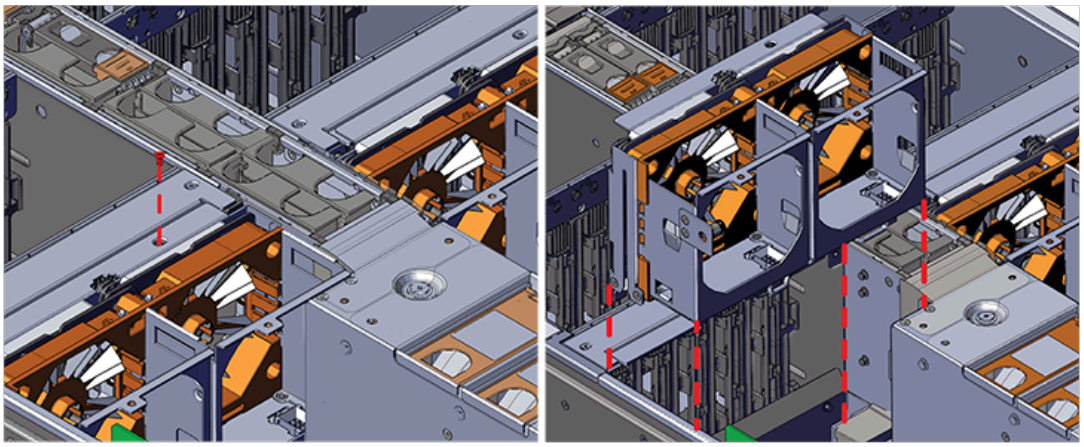
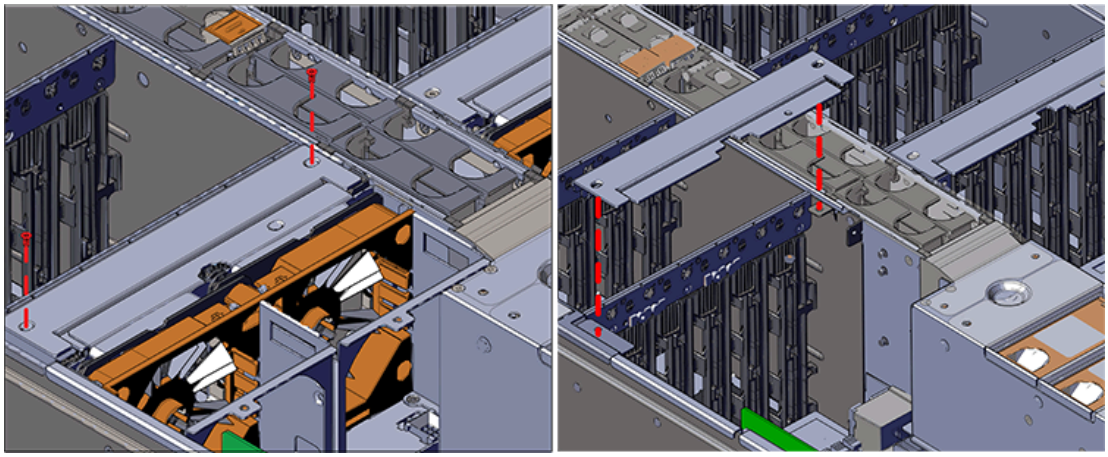


Figure 19: Removing the Fan Bay



c. Remove the screws that secure the plenum in place and lift the plenum off of the chassis.

Figure 20: Removing the Plenum

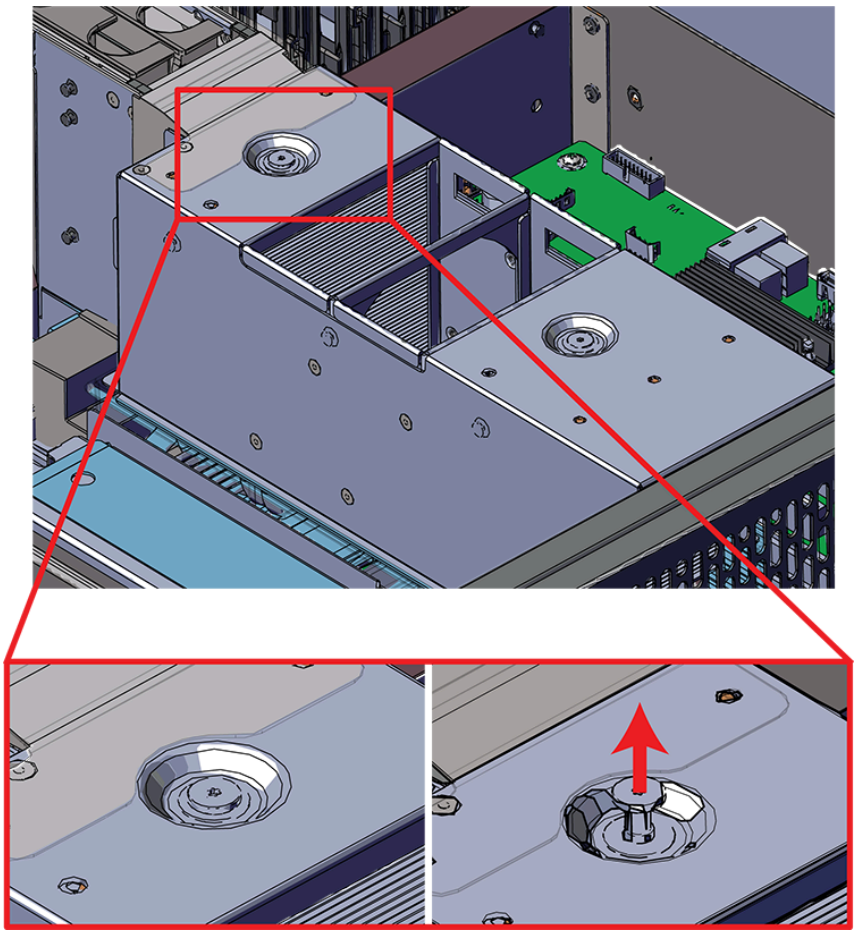


Step 20: Uninstall the remaining fan bay and plenum in the same manner as the first.

Step 21: Uninstall the System Fan Bay.

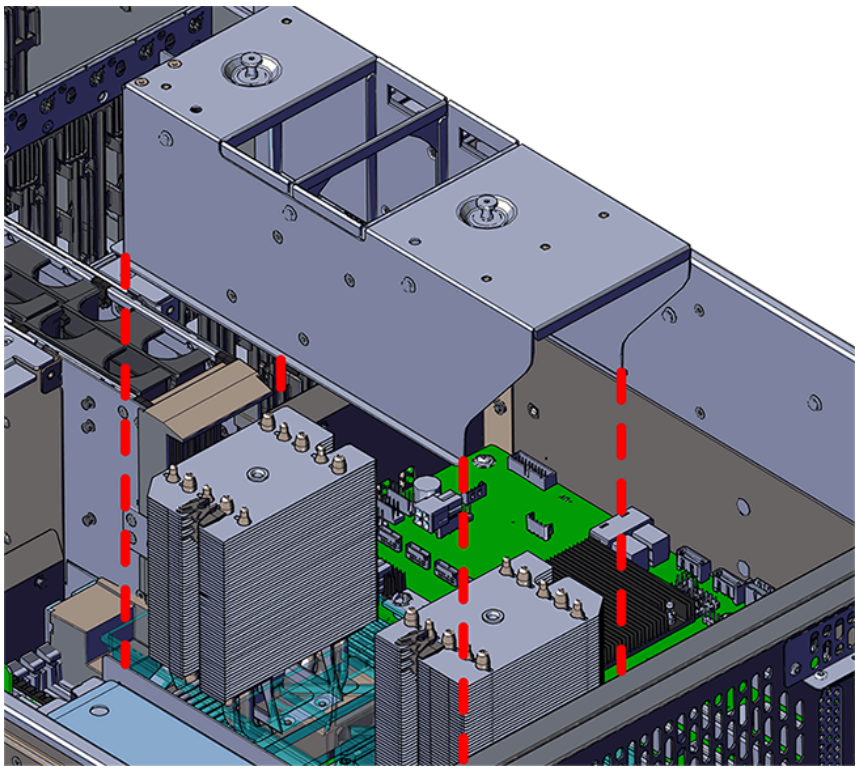
a. Loosen the captive screws that secure the system fan bay to the chassis using a T15 Torx Screwdriver until the cover comes loose. The screws will be retained within the System Fan Bay while uninstalling the part.

Figure 21: Loosening the System Fan Bay Captive Screws



b. Slide the system fan bay out of the chassis and set it aside.

Figure 22: Removing the System Fan Bay

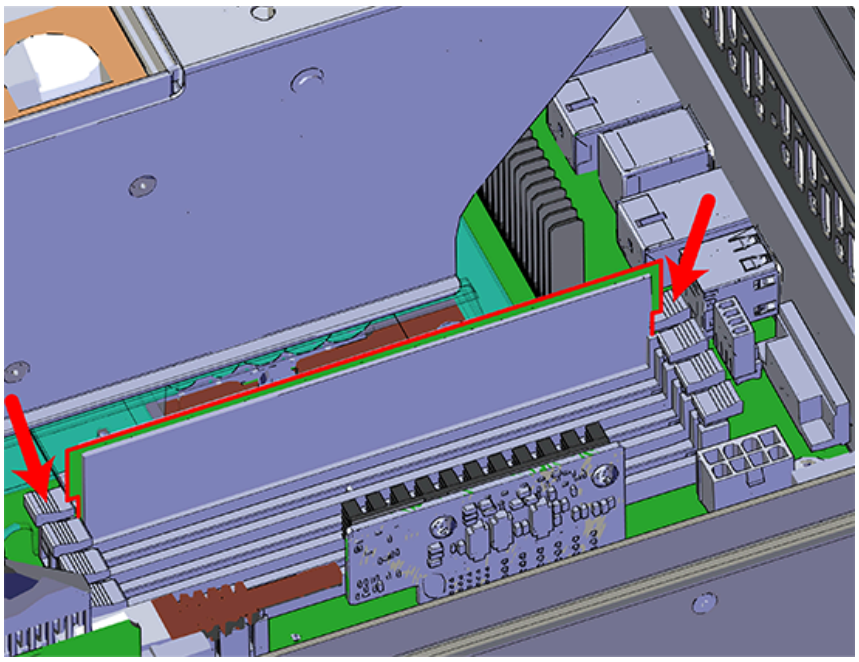


Step 22: Uninstall the DIMMs.

a. Identify the location of the DIMM.

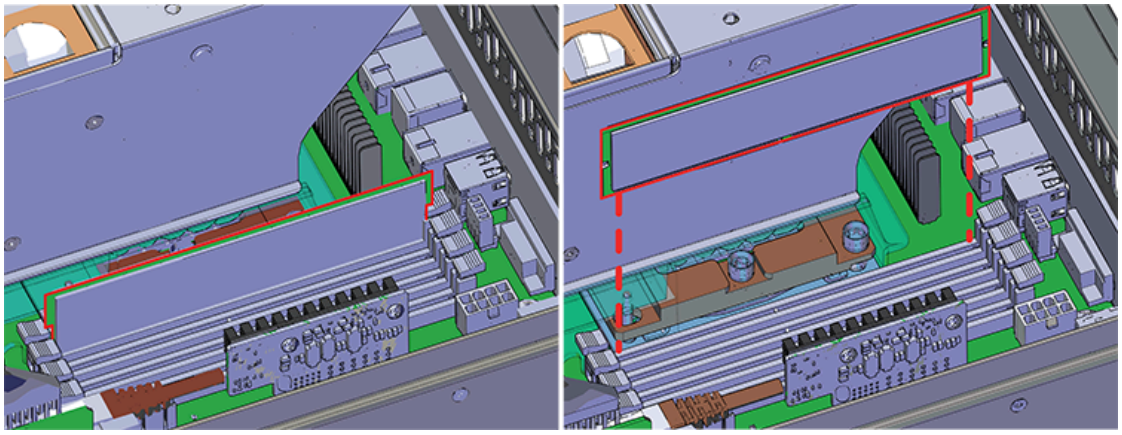
b. Carefully push apart on the DIMM ejector tabs located on either side of the DIMM slots. The DIMM will pop up and unlock from the DIMM slot.

Figure 23: DIMM Ejector Tabs



c. Slide the DIMM out of the of DIMM slot and set it aside.

Figure 24: DIMM Removal

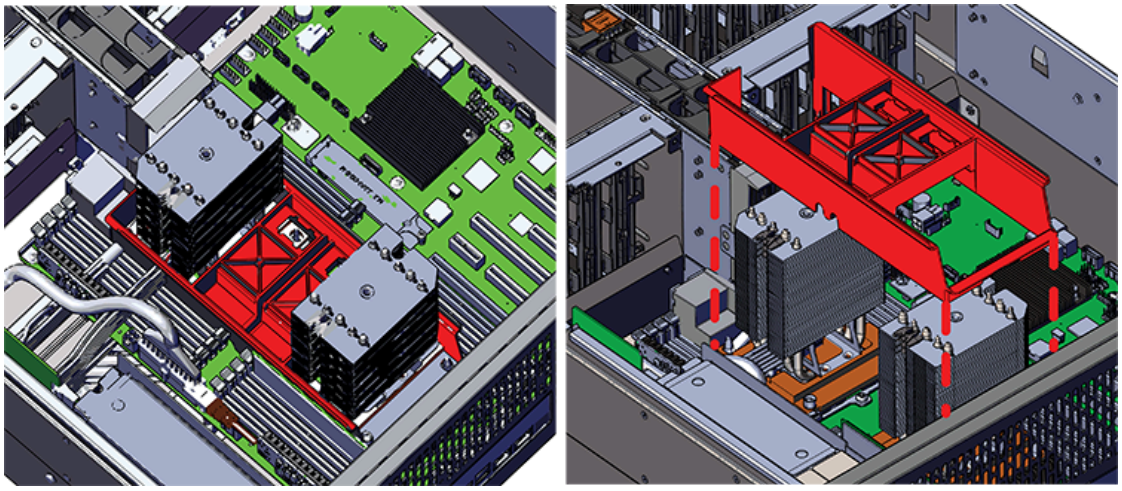


d. Uninstall the remaining DIMMs in the same manner as the first.

Step 23: Uninstall the System Fan base.

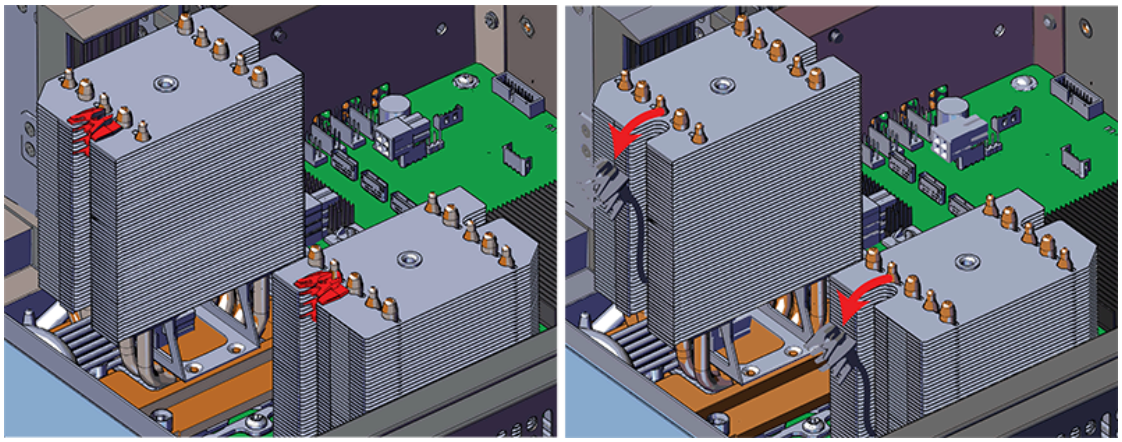
a. Slide the system fan base up and over the CPUs until clear of the CPUs. Set the system fan base to the side with cables still attached. The cables are long enough to remain connected during these steps.

Figure 25: Removing the System Fan Base (highlighted in red)



b. Locate and remove the LED brackets that are attached to the Heat Sink.

Figure 26: Uninstalling the CPU LED Brackets

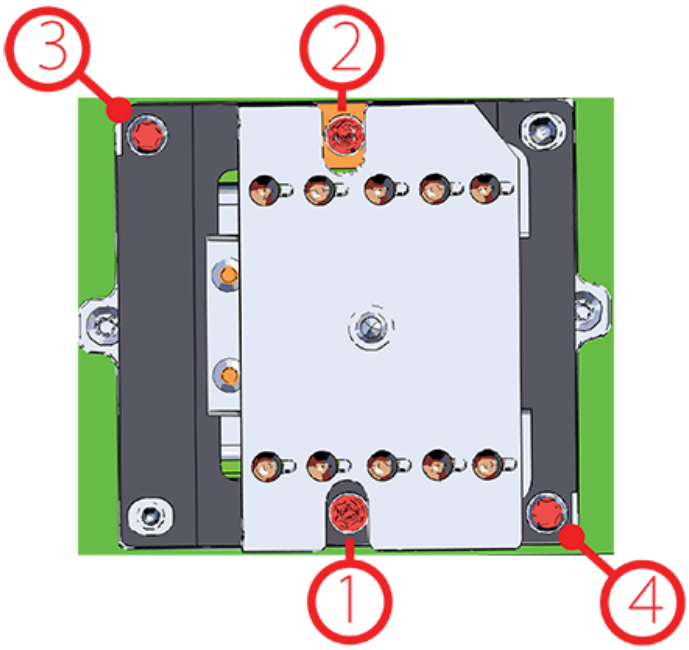


Step 24: Uninstall the CPU and Heat Sink module.

a. Locate the failed CPU and Heat Sink module.

b. The Heat Sink must be removed by loosening the Torx T30 screws in a specific order. Use the following diagram to determine the specific order.

Figure 27: Heat Sink Removal Order



c. Slide the Heat Sink clear of the socket alignment pins.

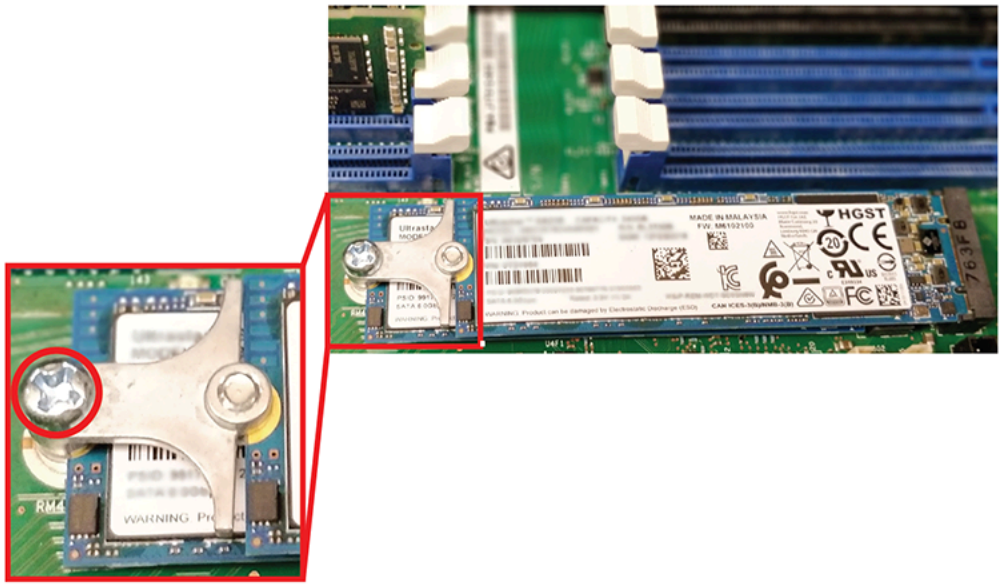
Step 25: Uninstall the remaining CPU and Heat Sink in the same manner as the first.

Step 26: Uninstall the M.2.

a. Locate the M.2 installed on the baseboard.

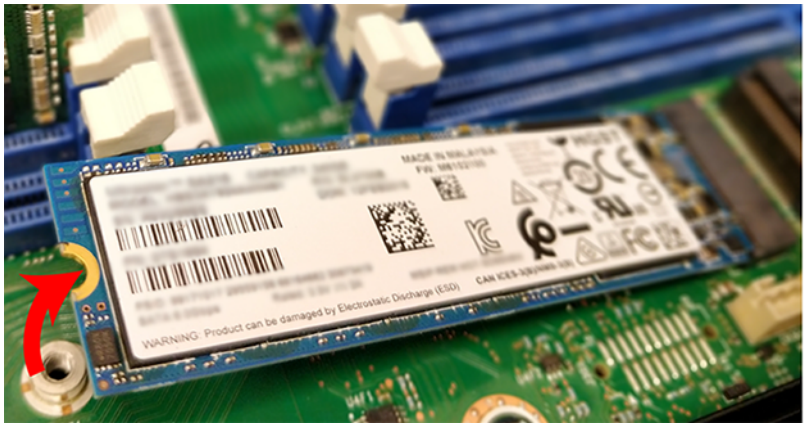
b. Remove the Philips head screw that secures the M.2 to the baseboard.

Figure 28: M.2 Screw



c. Pull the top M.2 out of the connector.

Figure 29: Uninstalling the M.2s



d. Repeat the previous substep to remove the bottom M.2.

Step 27: Uninstall the add-in card bracket.

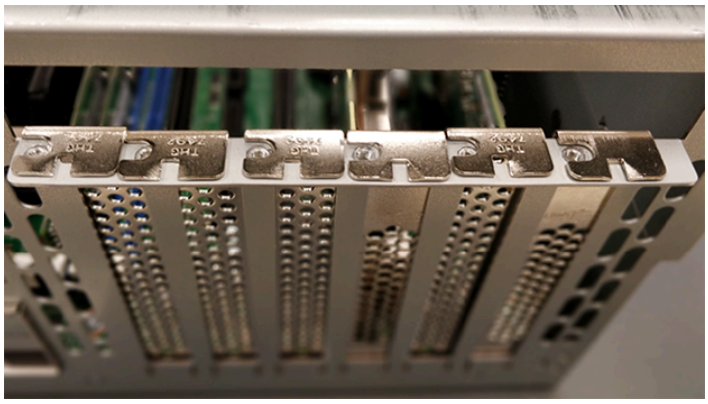
a. From the rear of the enclosure, remove the eight screws that secure the add-in cards to the enclosure using a T10 Torx Screwdriver.

Figure 30: Add-In Card Screws

b. Remove the bracket from the end of the chassis.

Figure 31: Add-In Card Bracket

Figure 32: Add-In Card Bracket Removed

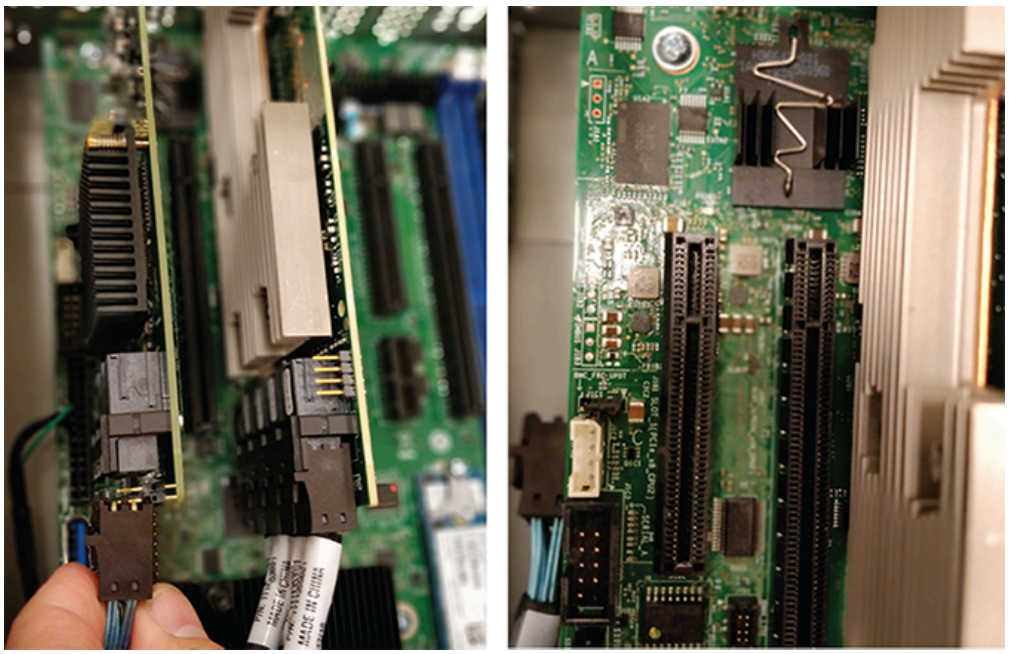


Step 28: Uninstall the add-in cards.

a. Locate the first add-in card.

b. Remove all cabling from the add-in card.

Figure 33: Add-In Card Remove Cabling and Uninstall



c. Carefully pull up on the add-in card until it comes free from the connector on the baseboard.

Step 29: Uninstall the remaining Add-in Card(s) in the same manner as the first.

Step 30: Uninstall the rear bulkhead.

a. Disconnect all of the cables that are connected to the rear bulkhead.

b. Remove the **12** (six on each side) T7 screws from the rear end of the chassis.

Figure 34: Rear Bulkhead Chassis Screws (Left Side)

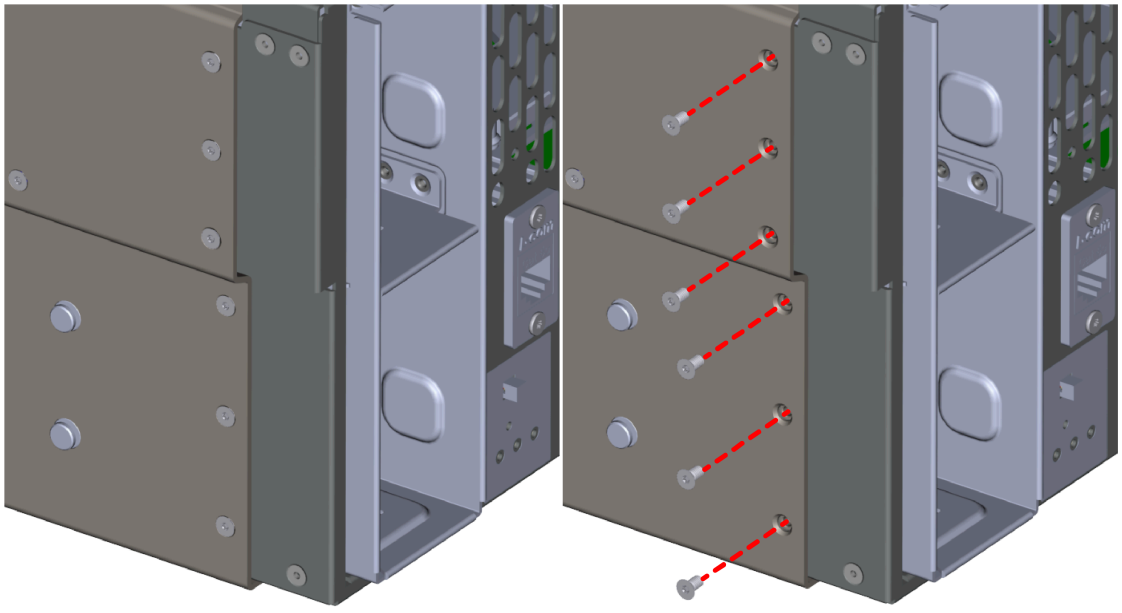
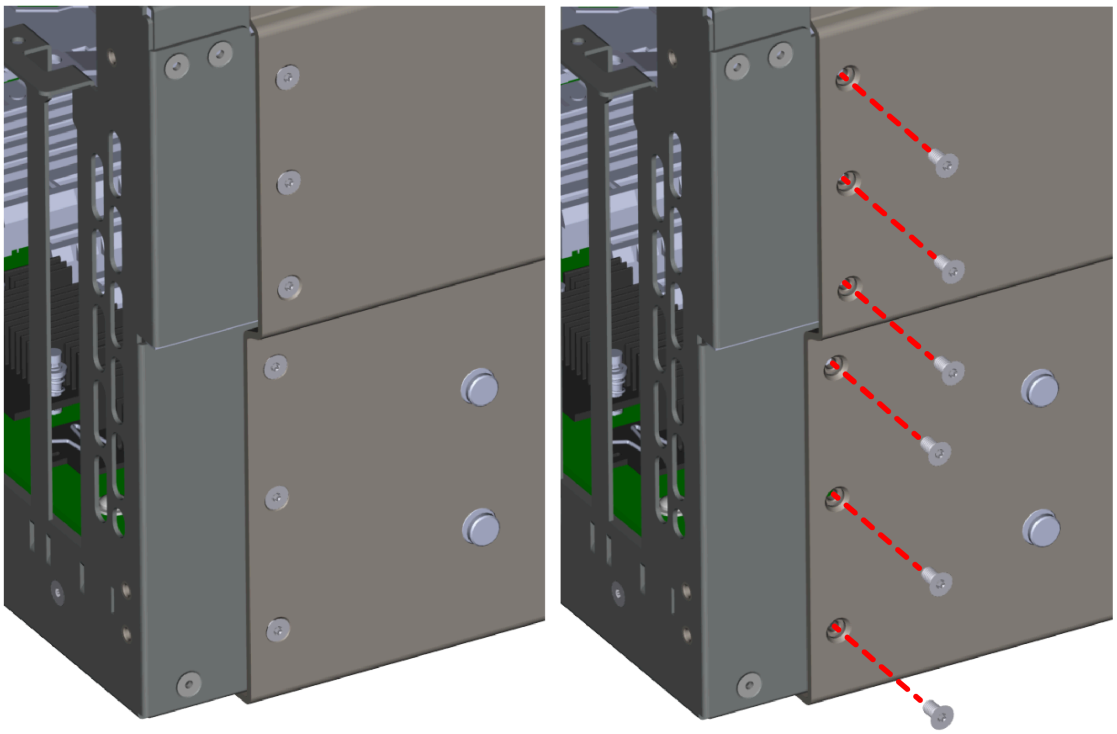
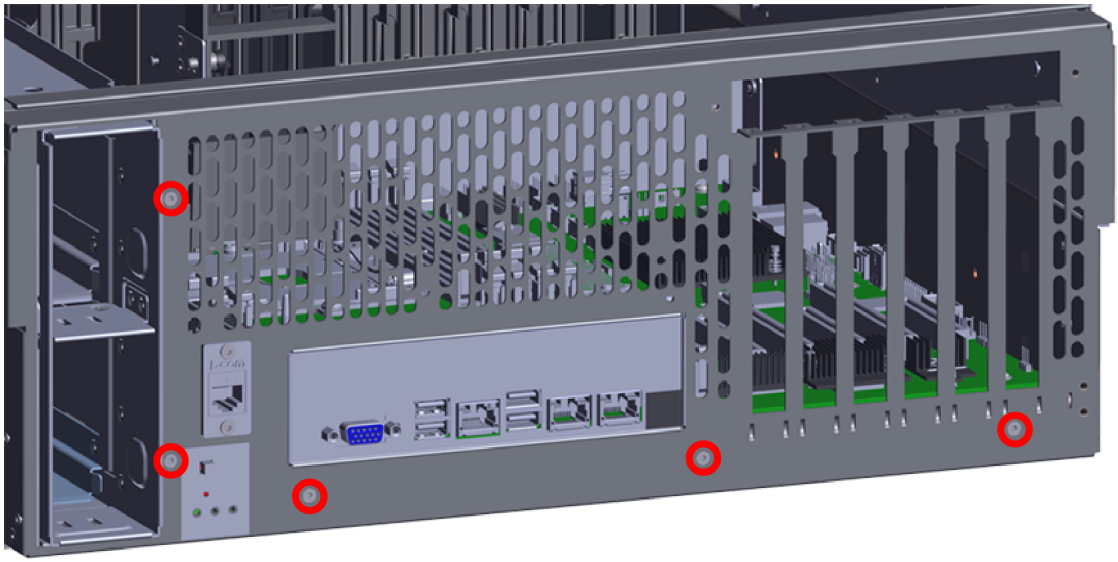


Figure 35: Rear Bulkhead Chassis Screws (Right Side)



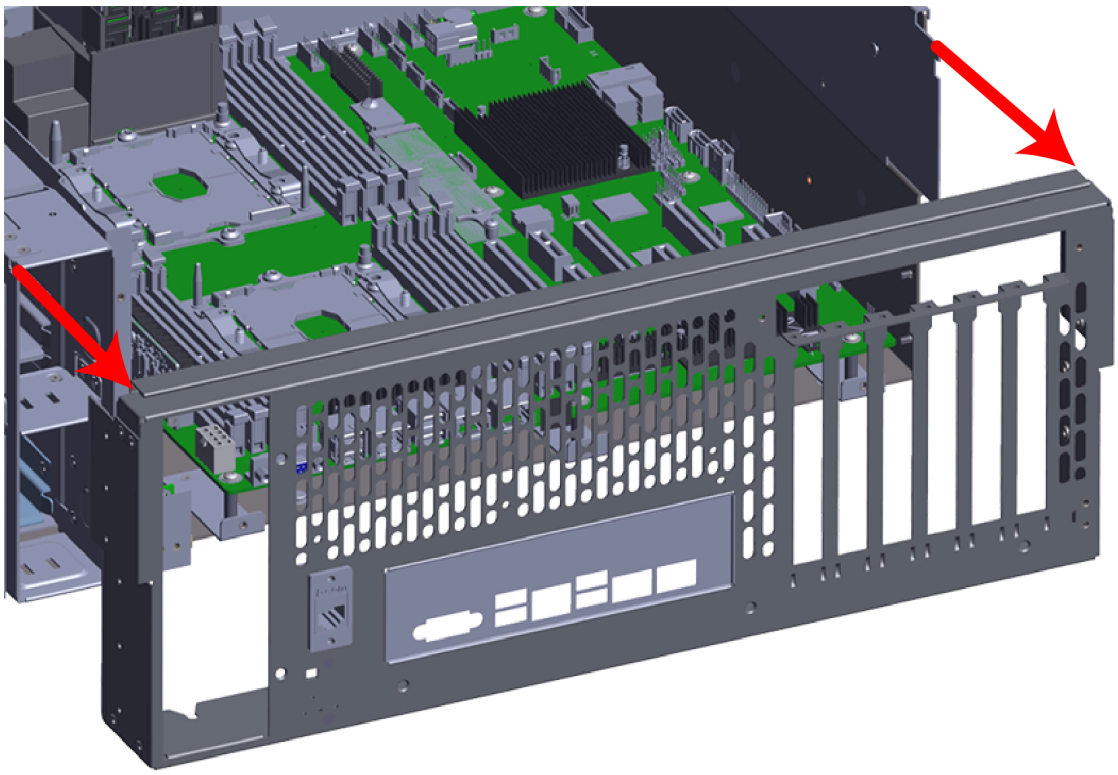
c. Remove the **5** T7 screws from the face of the rear bulkhead.

Figure 36: Rear Bulkhead Face Screws



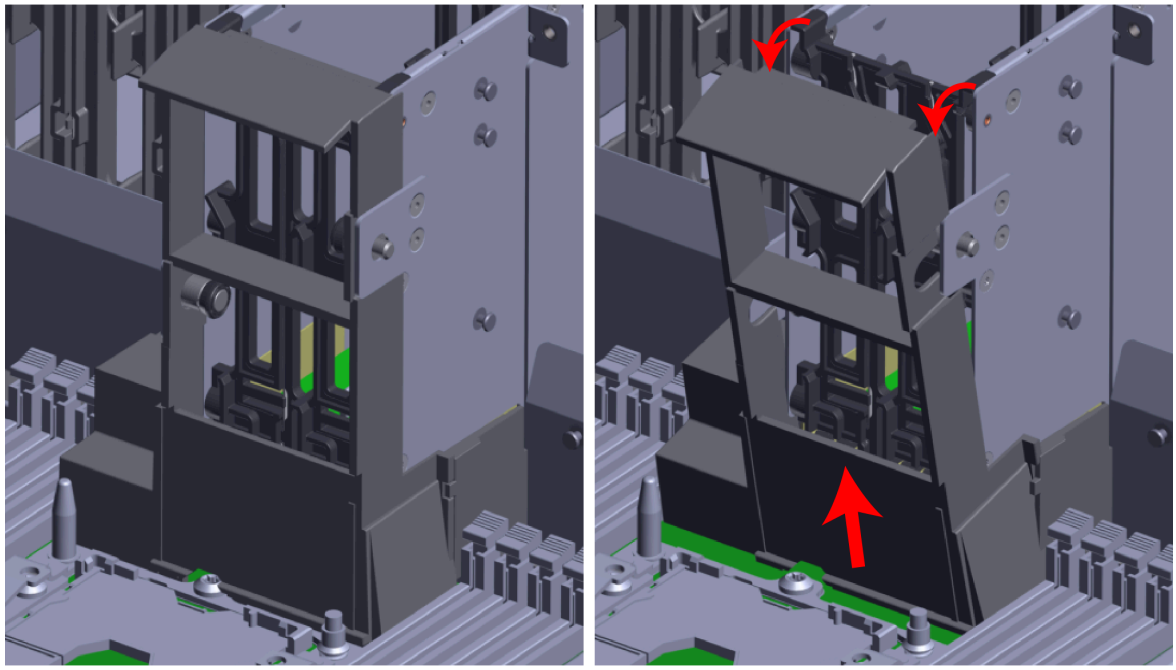
d. Carefully remove the rear bulkhead from the chassis.

Figure 37: Removing the Rear Bulkhead



Step 31: Uninstall the Lower Air horn bracket by rotating the top of the bracket away from the center channel and slide the bracket out.

Figure 38: Uninstalling the Air Horn

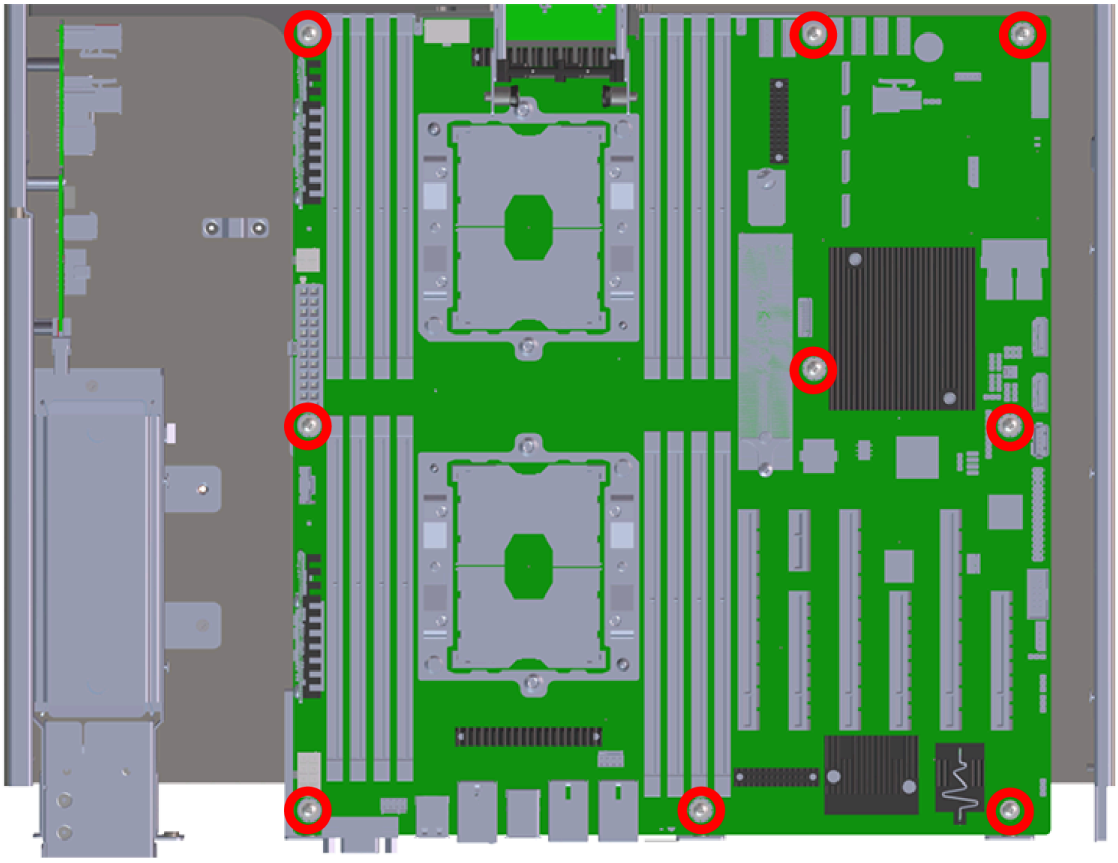


Step 32: Uninstall the motherboard.

a. Disconnect all of the cables that are connected to the motherboard. These cables connect to other various components within the chassis. These other connections can remain connected to other components until it is time to uninstall each of those components.

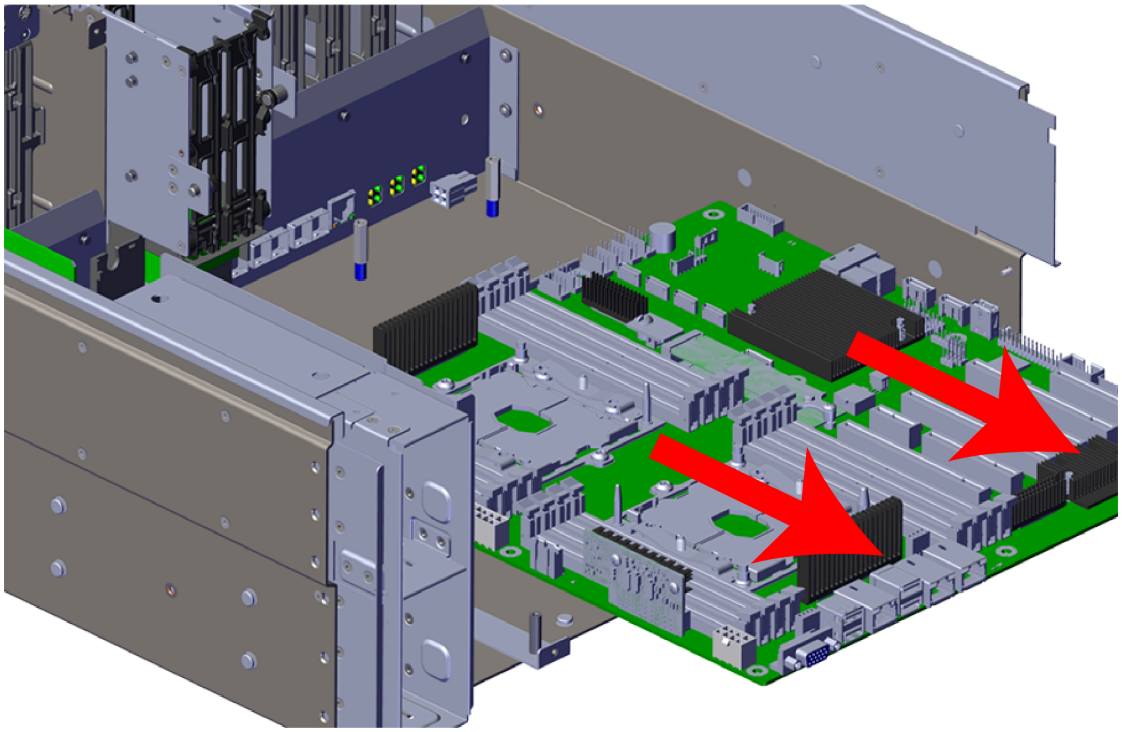
b. Remove the **9** Philips Head screws from the motherboard.

Figure 39: Motherboard Screw Location



c. Remove the motherboard from the chassis by sliding the motherboard toward the rear of the chassis and out.

Figure 40: Removing the Motherboard

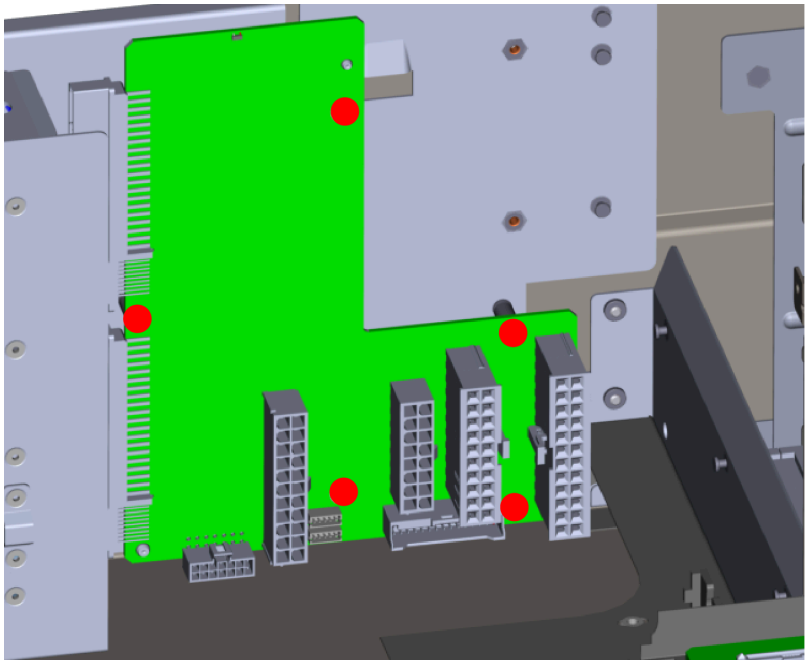


Step 33: Uninstall the ATX PDB.

a. Disconnect all of the cables that are connected to the ATX PDB.

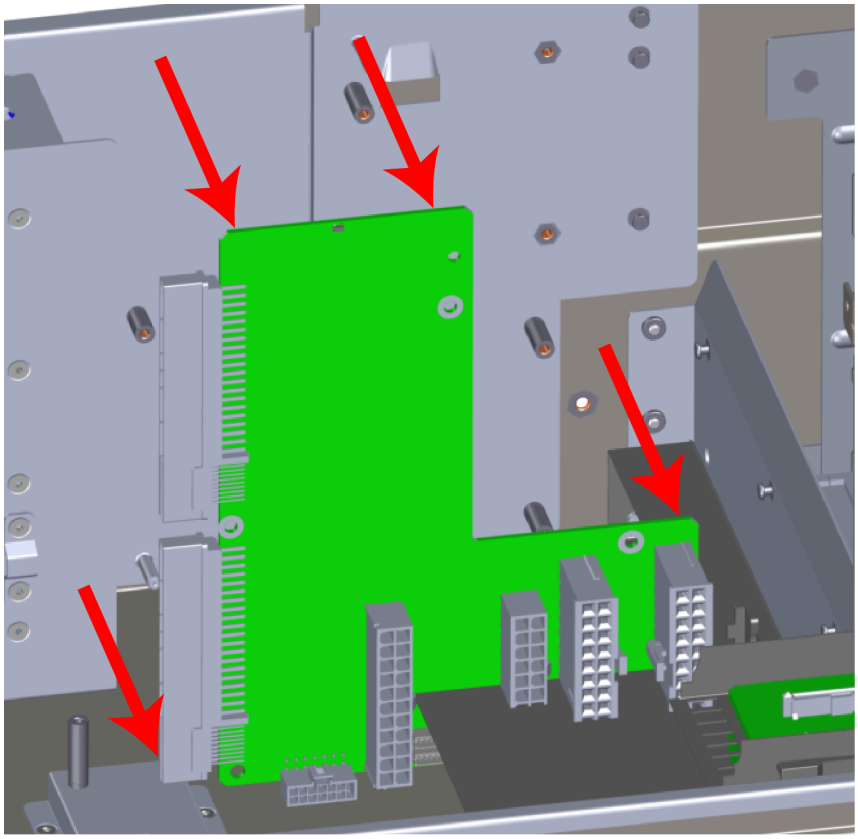
b. Remove the **5** T7 screws from the ATX PDB.

Figure 41: ATX PBD Screw Location



c. Remove the ATX PDB from the chassis.

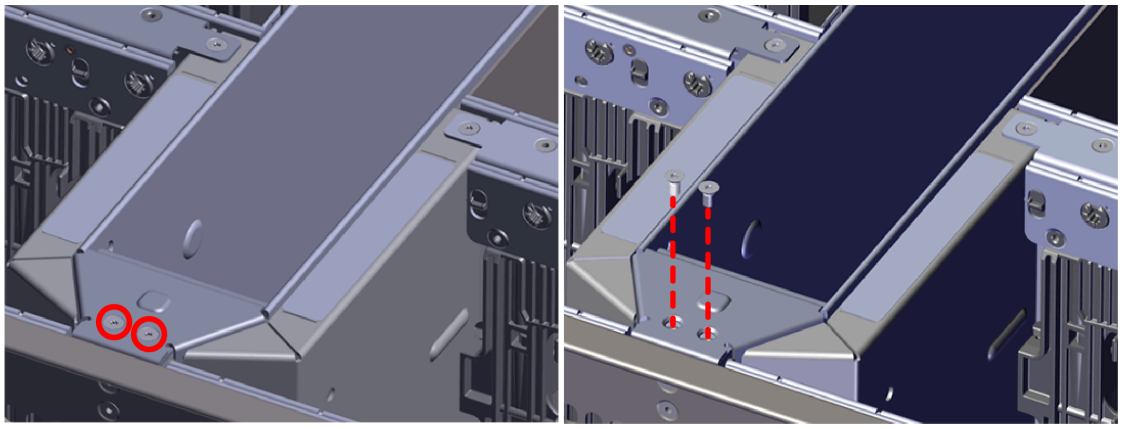
Figure 42: Removing the ATX PBD



Step 34: Uninstall the IOM housing.

a. Remove the **2** T7 screws from the top front of the IOM housing located at the front top of the chassis.

Figure 43: IOM Housing Screws (front top of the chassis location)



b. Remove the remaining **2** T7 screws (one on each side) from the inner part of the IOM housing.

Figure 44: Inner IOM Housing Screws (Left Side)

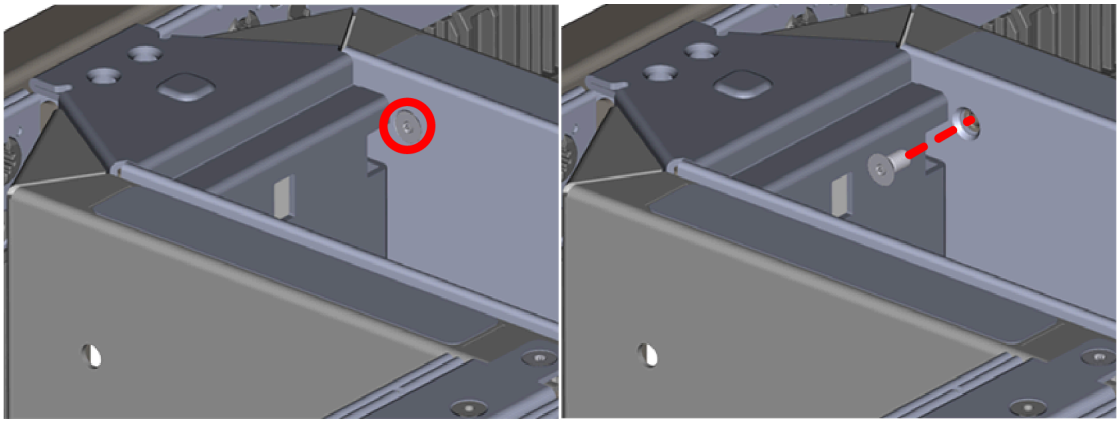
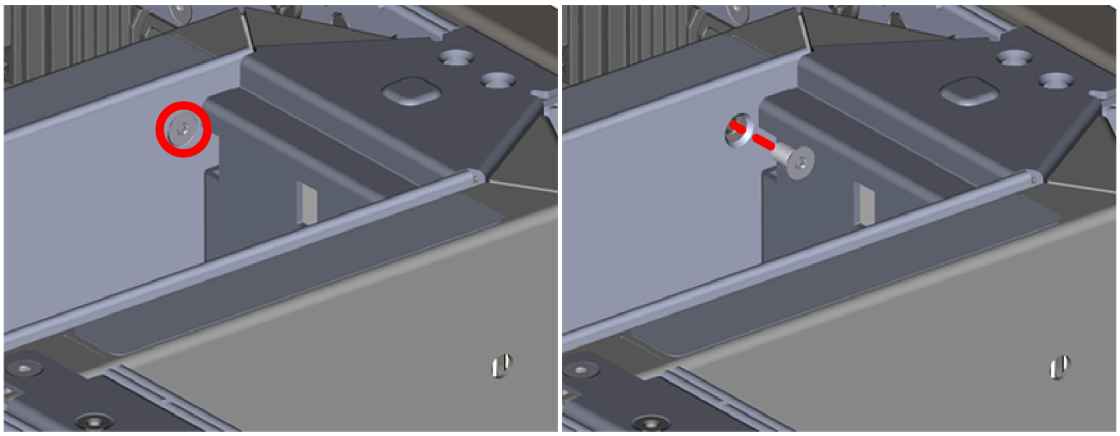
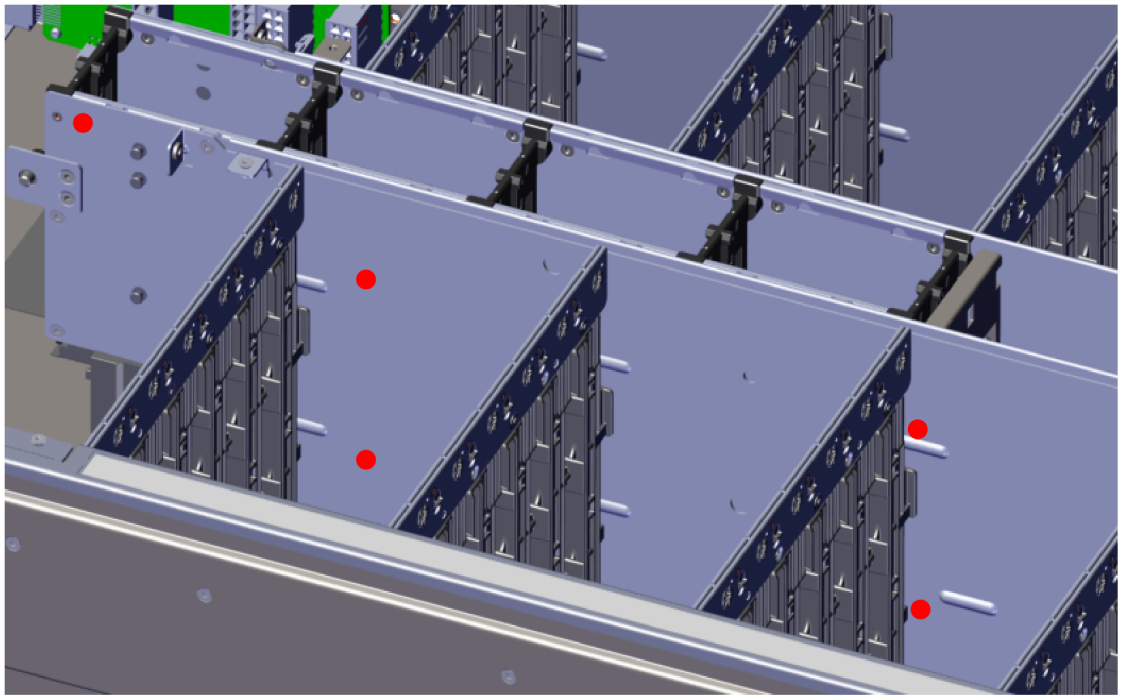


Figure 45: Inner IOM Housing Screws (Right Side)



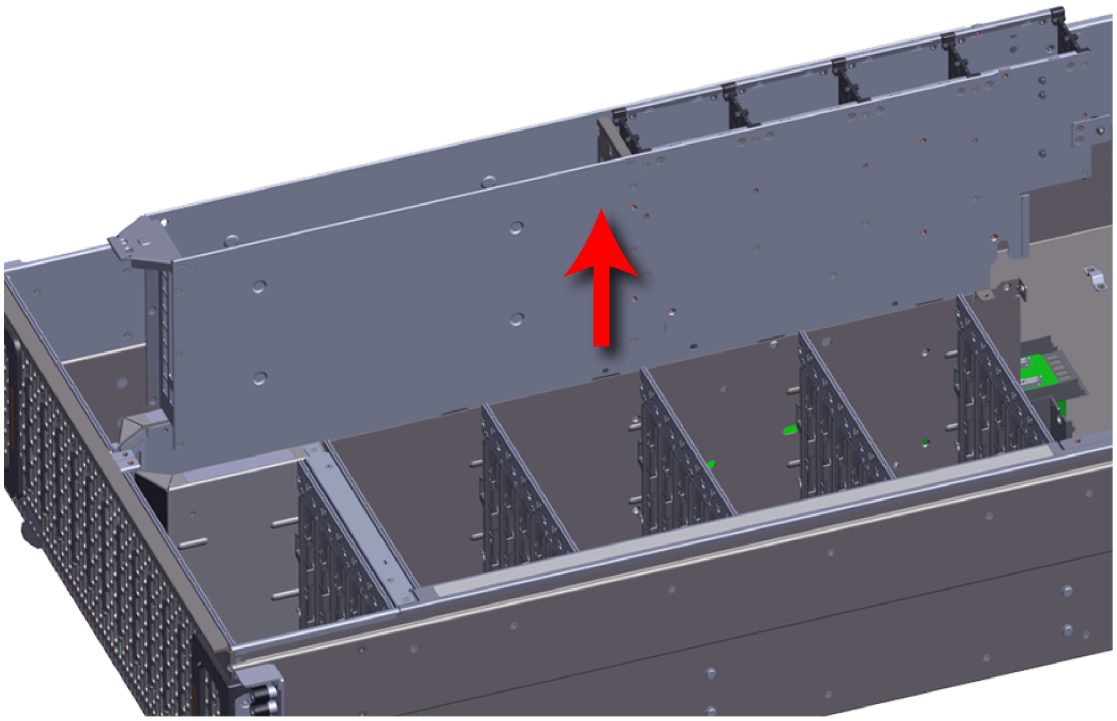
c. Remove the **10** T7 screws (four on each side) from the inside of the drive cage that connect to the IOM housing.

Figure 46: IOM Housing Screws (Inner IOM housing location)



d. Lift the IOM housing out of the chassis.

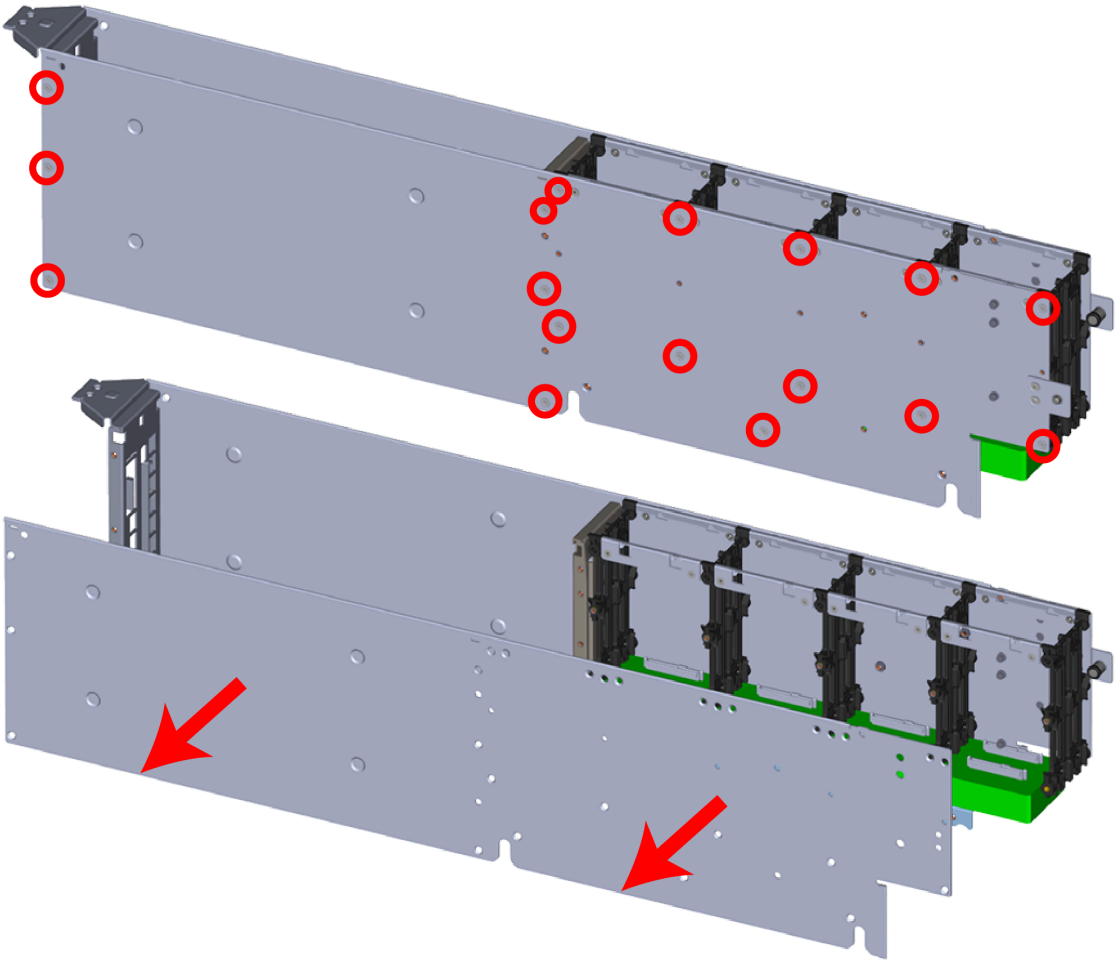
Figure 47: Removing the IOM Housing



Step 35: Disassemble the IOM housing.

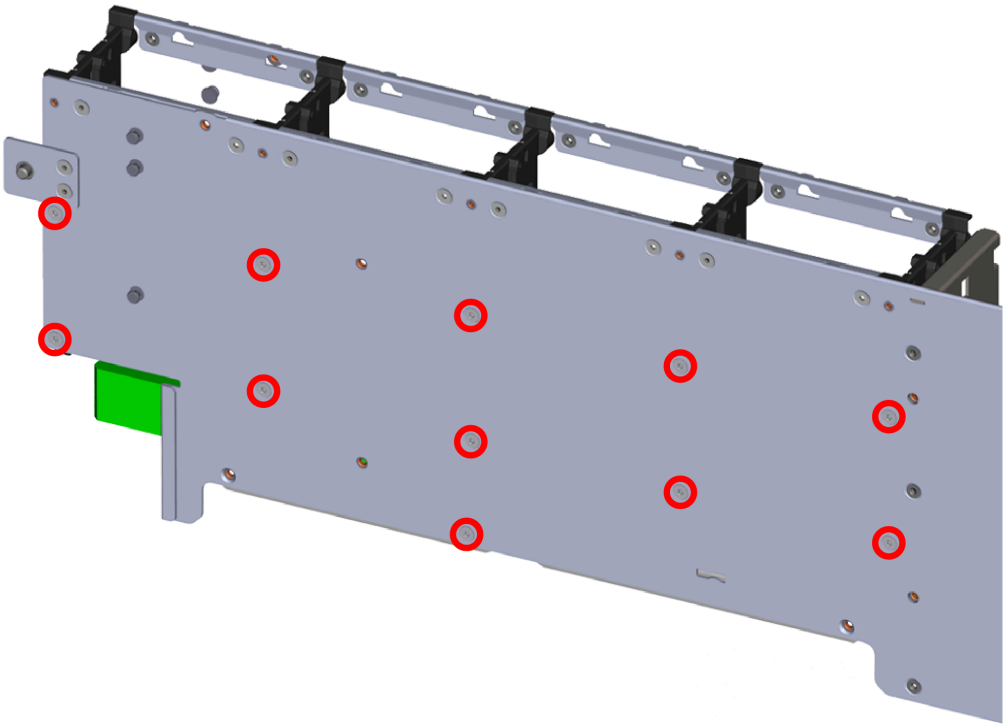
a. Remove the **17** T7 screws from the right IOM housing side panel and remove the panel.

Figure 48: IOM Housing Screw Location (Right Panel)



b. Remove the **11** T7 screws from the left IOM housing side panel and remove the panel. As a result, the SSD board will detach from the IOM housing.

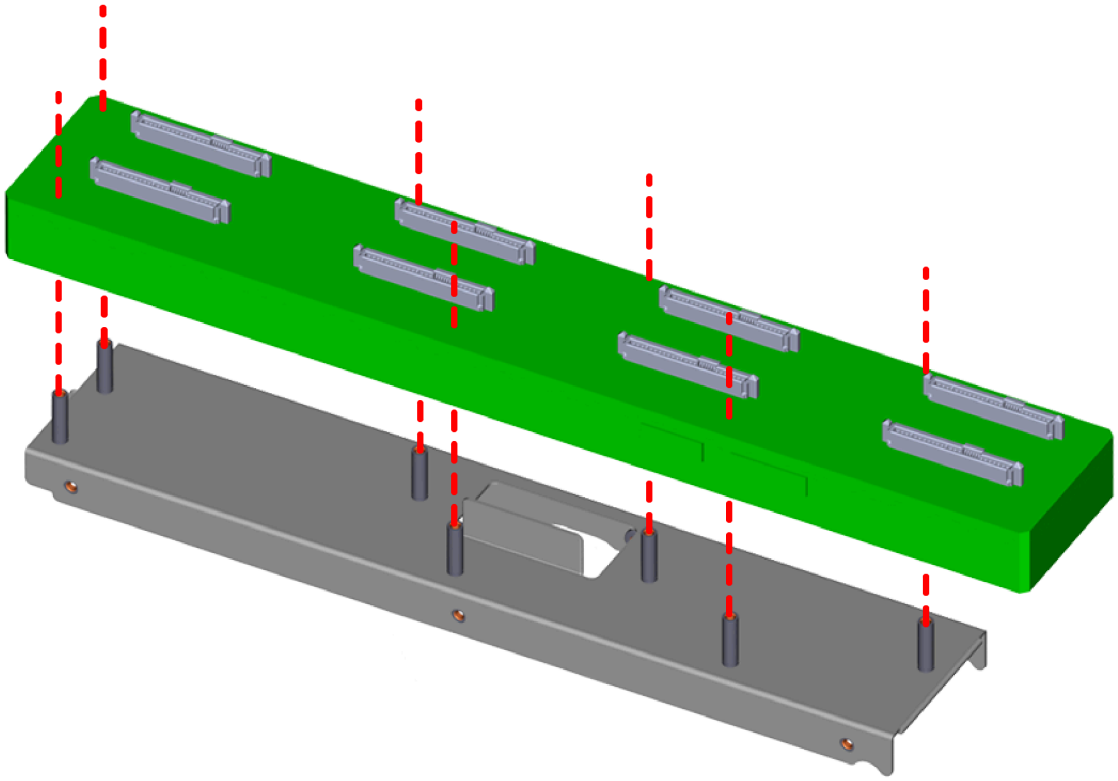
Figure 49: IOM Housing Screw Location (Left Panel)



c. Remove the drive divider frame. Once the left side panel has been removed, the drive divider frame will be disconnected from everything.

d. Remove the **7** T7 screws from the SSD board and remove the bottom metal plate.

Figure 50: Removing the SSD Board from the Bottom Plate

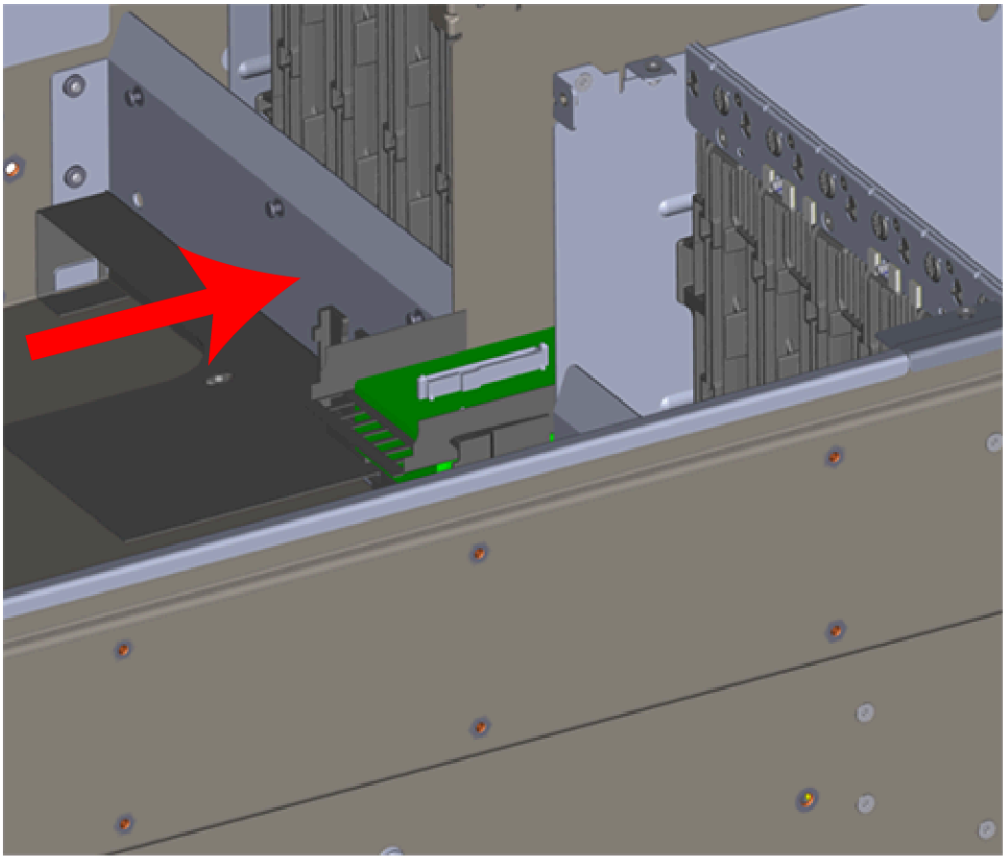


e. Disconnect all of the cables from the SSD board.

Step 36: Uninstall the lower bulkhead plate.

a. Find the lower bulkhead plate located directly behind the drive cages. The lower bulkhead plate contains the connectors that get routed to the rear bulkhead connectors.

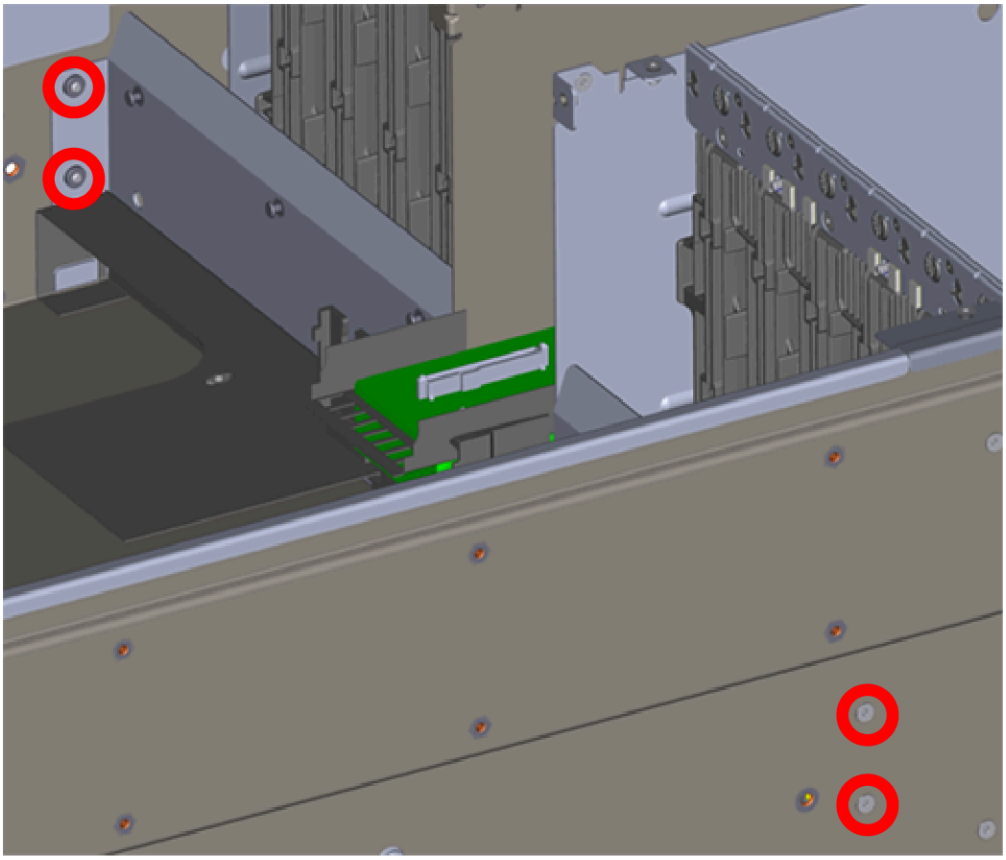
Figure 51: Lower Bulkhead Plate Location



b. Remove the Ethernet cable that is connected to the port at the rear of the baseboard.

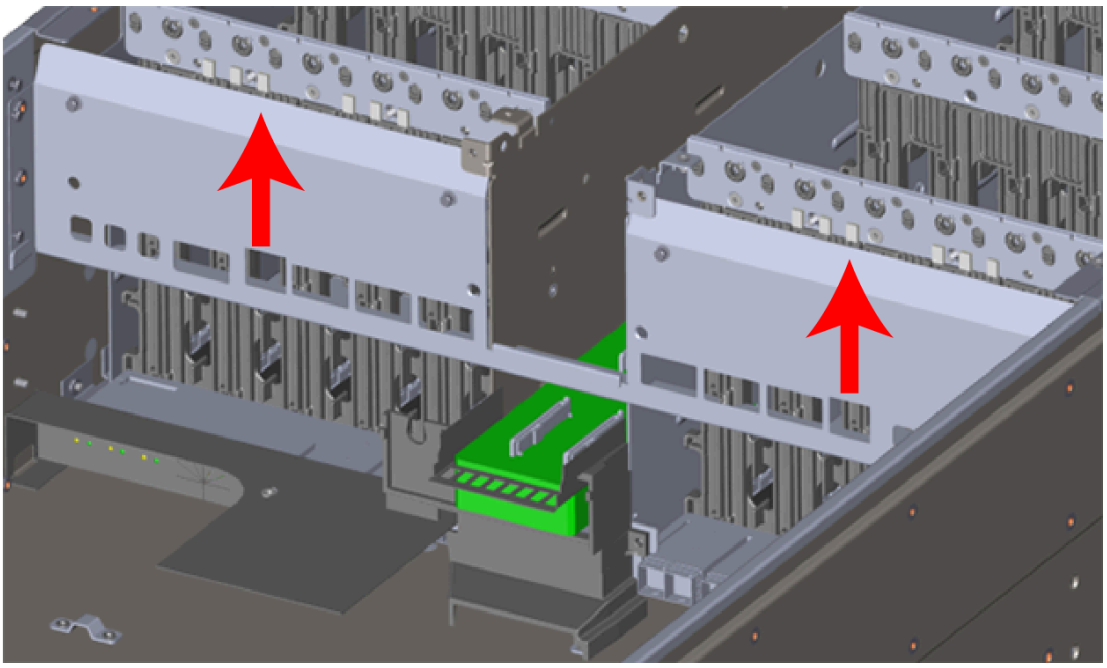
c. Remove the **4** T7 screws that secure the lower bulkhead plate to the chassis from either side of the chassis.

Figure 52: Lower Bulkhead Plate Screw Location



d. Slide plate toward the rear of the enclosure and rotate up and out.

Figure 53: Removing the Lower Bulkhead Plate



Step 37: Uninstall the left drive cage.

Note: The left drive cage is located on the left side when accessing the enclosure from the front.

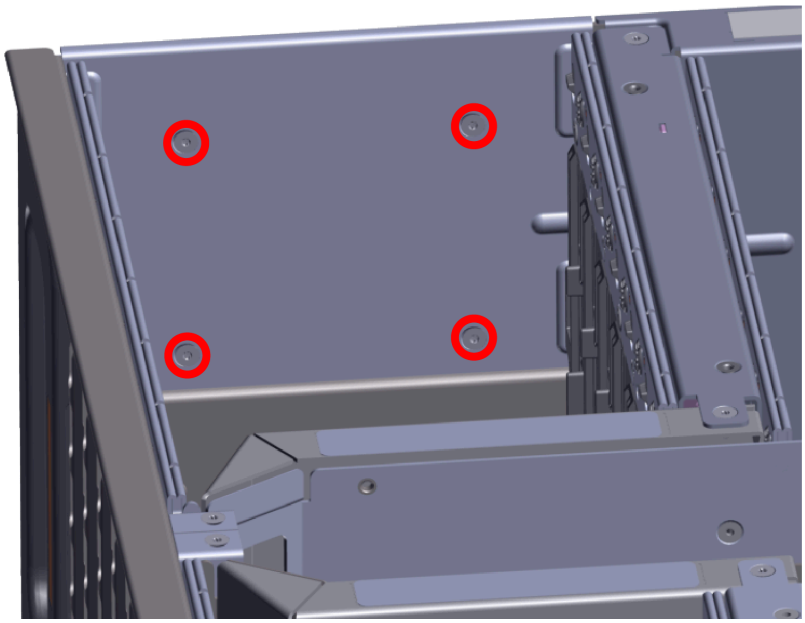
a. Remove the drive cage screws from the outside of the left-hand side of the chassis. There are **12** T7 screws and **2** T8 screws.

Figure 54: Left Drive Cage T7 Screw Location (Outside of the Chassis)

Figure 55: Left Drive Cage T8 Screw Location (Outside of the Chassis)

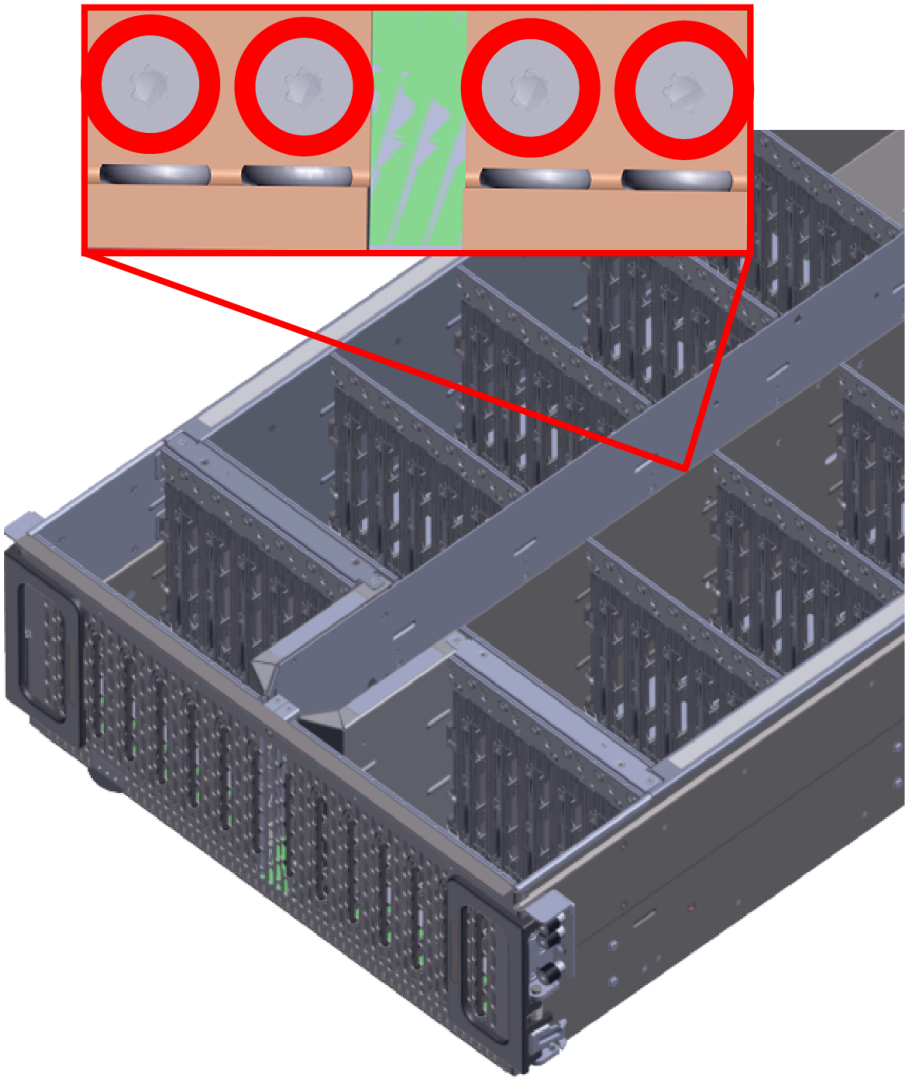
b. Remove the **4** T7 from inside the drive cage in the first bay.

Figure 56: Left Drive Cage Screw Location (Inside of the Chassis)



c. Remove the **4** T7 screws that attach the PDB to the baseboard. The PDB is attached to the drive cage and baseboard and will be removed while uninstalling the left drive cage.

Figure 57: PDB Baseboard Screw Location

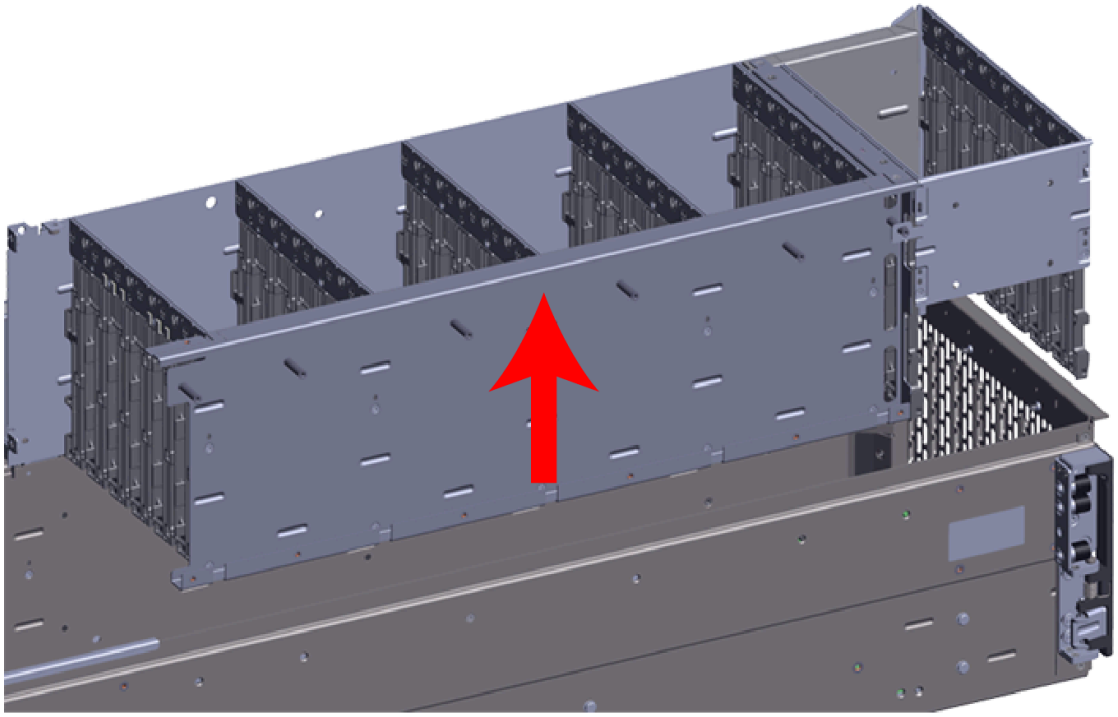


d. Remove the **4** T7 from inside the drive cage tabs located in each bay after the front bay.

Figure 58: Left Drive Cage Screw Location (Connection to the base board)

e. Firmly pull up on the frame of the drive cage and remove it from the chassis.

Figure 59: Removing the Left Drive Cage



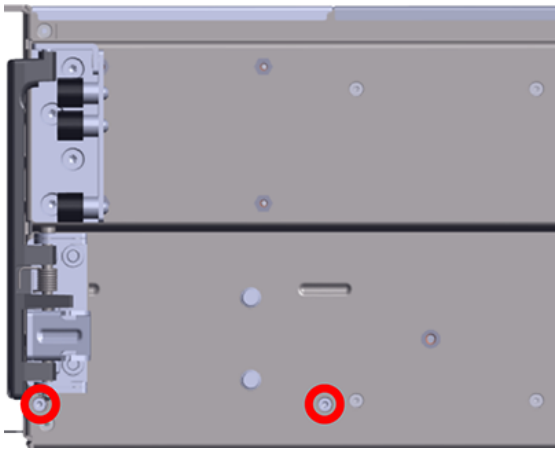
Step 38 : Uninstall the right drive cage.

Note: The right drive cage is located on the right side when accessing the enclosure from the front.

a. Remove the drive cage screws from the outside of the left-hand side of the chassis. There are **12** T7 screws and **2** T8 screws.

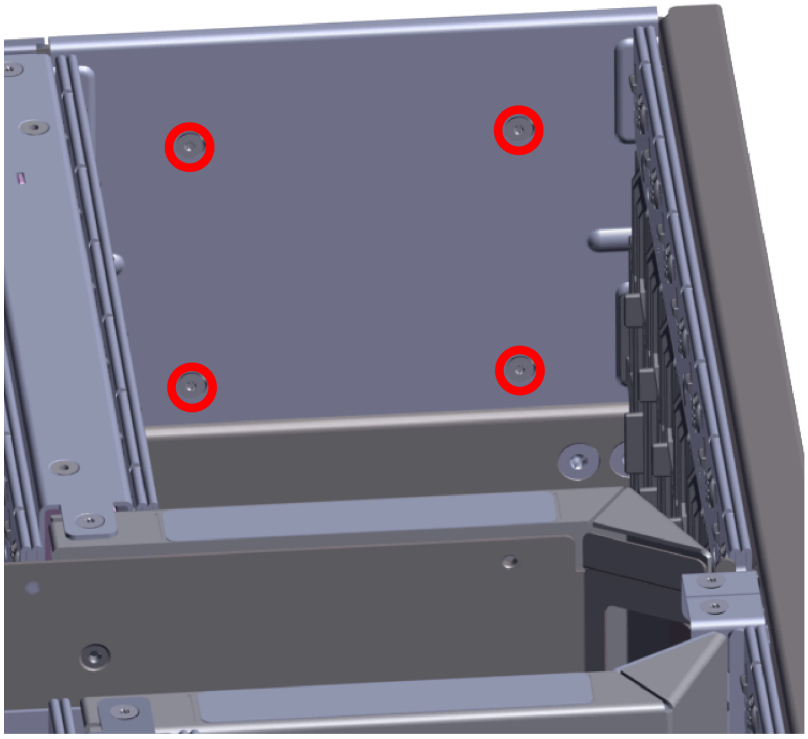
Figure 60: Right Drive Cage T7 Screw Location (Outside of the Chassis)

Figure 61: Right Drive Cage T8 Screw Location (Outside of the Chassis)



b. Remove the **4** T7 from inside the drive cage in the first bay.

Figure 62: Right Drive Cage Screw Location (Inside of the Chassis)

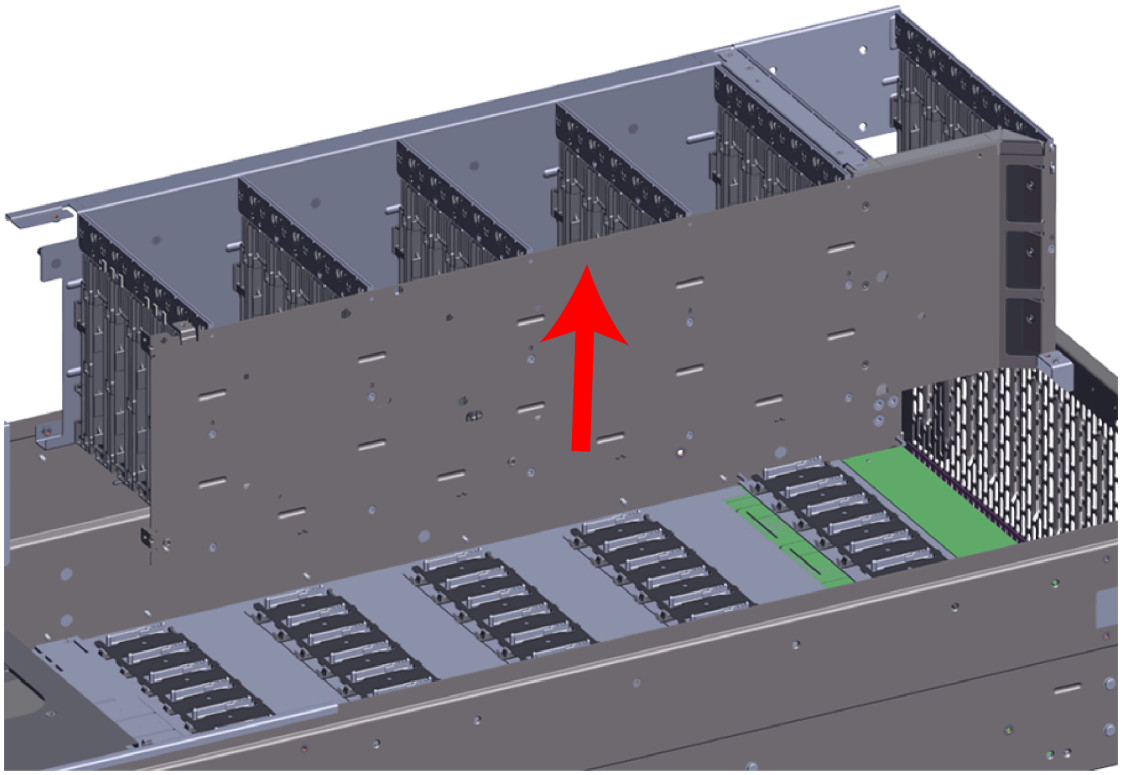


c. Remove the **4** T7 from inside the drive cage tabs located in each bay after the front bay.

Figure 63: Right Drive Cage Screw Location (Connection to the base board)

d. Firmly pull up on the frame of the drive cage and remove it from the chassis.

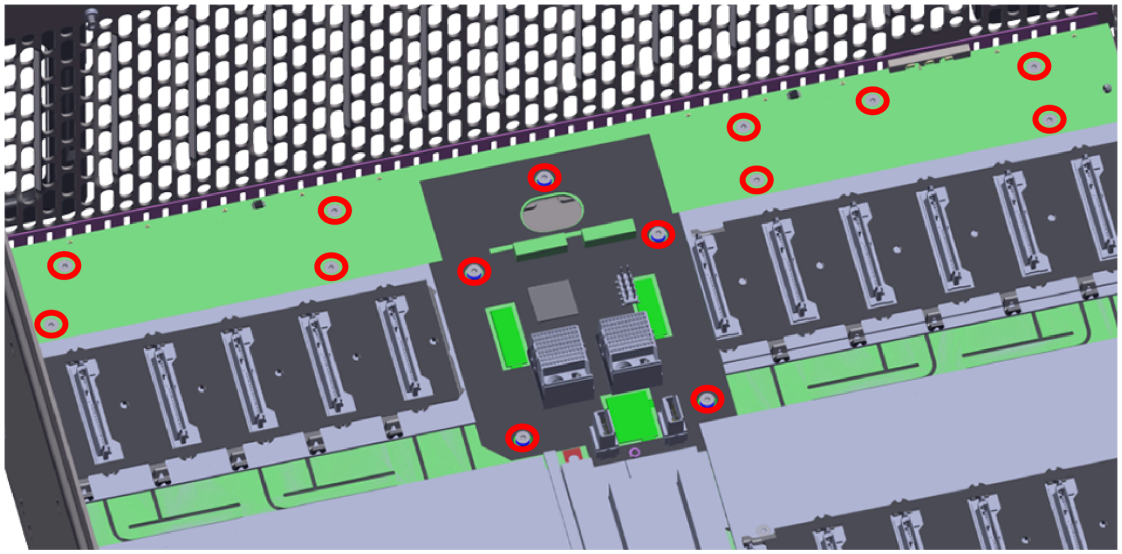
Figure 64: Removing the Right Drive Cage



Step 39: Uninstall the baseboard.

a. Remove the **14** T7 screws that secure the T-board in place.

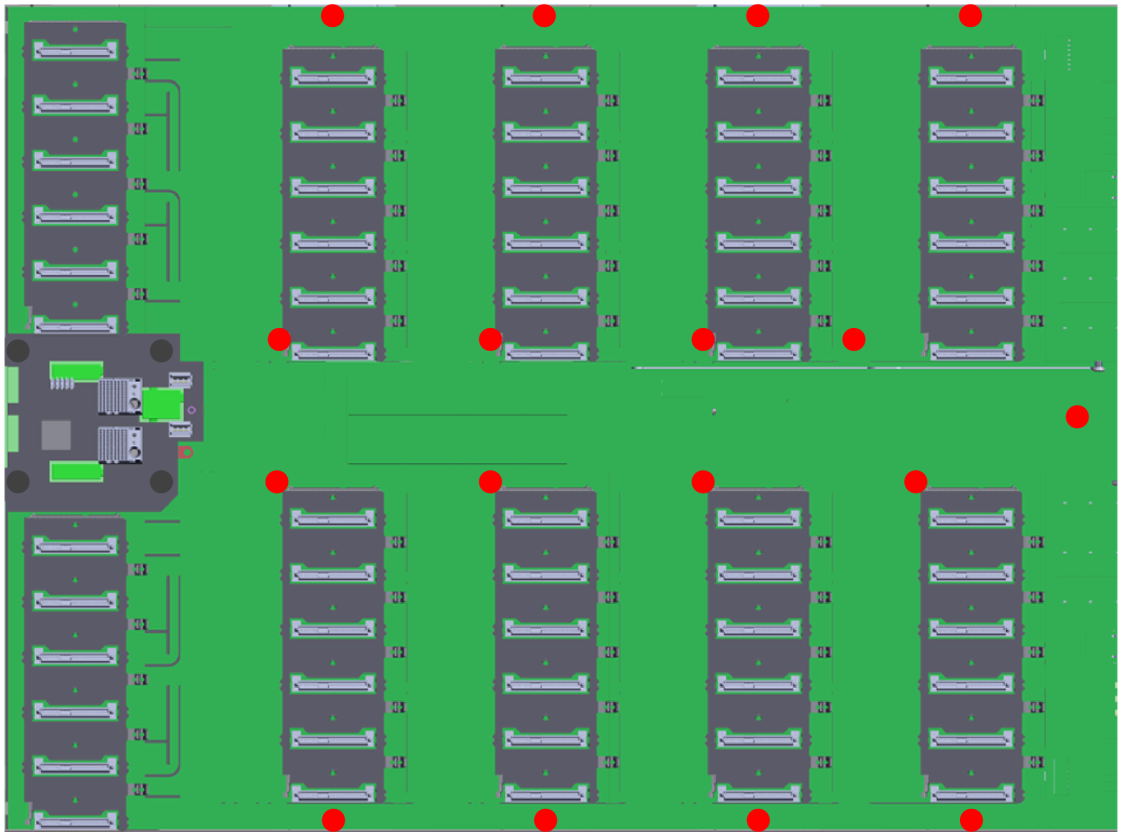
Figure 65: T-board Screw Location



b. Remove the **17** T7 screws that secure the baseboard in place.

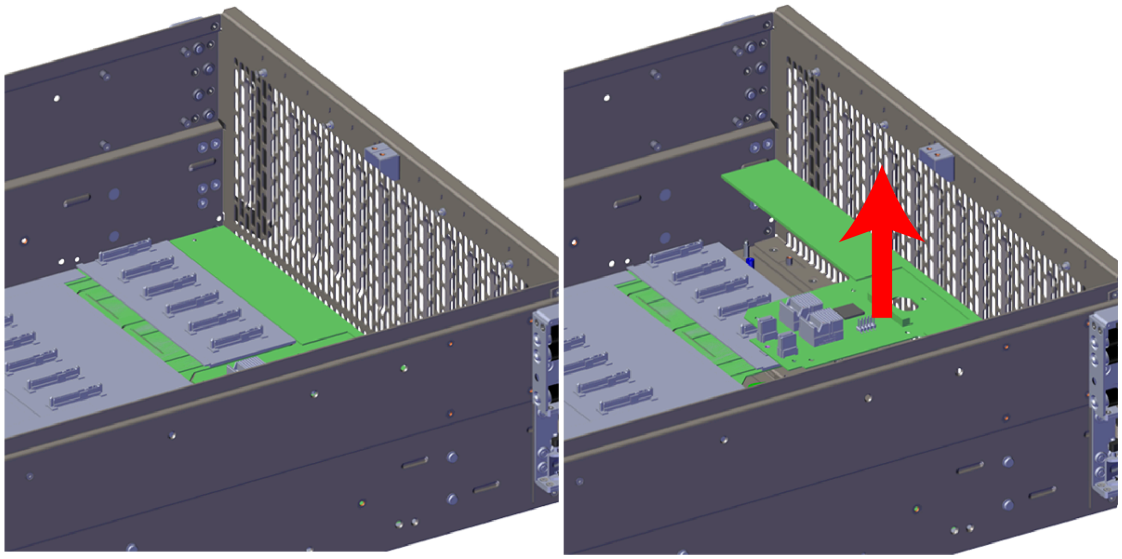
Note: Only remove the Torx screws. **Do not** remove any of the Philips Head screws from the baseboard.

Figure 66: Baseboard Screw Location



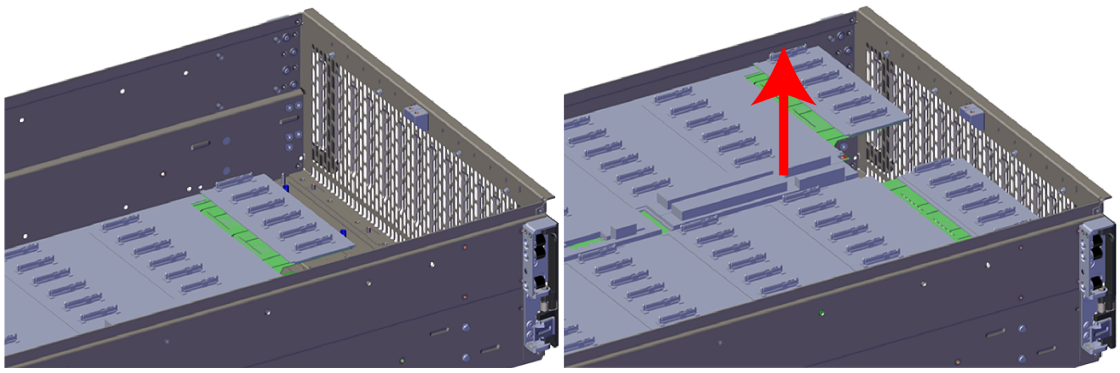
c. Once all of the HDD limiters have been removed, pull up on the T-board near the front of the chassis and remove it.

Figure 67: Removing the T-board



d. Pull up on the 60 baseboard and remove it from the chassis.

Figure 68: Removing the 60 Baseboard



e. Remove the Formex lining that protects the baseboard from the chassis. This lining is just set in place and can simply just be pulled out.

Result: The disassembly is now complete.