

# ECS Appliance SSD Replacement Guide

3.5

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Overview

This guide provides information for ECS Gen3 EX Series and Gen2 U Series disk replacement.

For all other ECS hardware platforms, contact Dell support to perform disk replacement.

ECS supports disk replacement using the process that is described in this document only if all nodes in the VDC are running ECS version 3.5 or later.

ECS blocks disk replacement by the user in the ECS UI until upgrade to version 3.5 or later is completed on all nodes. For assistance carrying out a disk replacement while upgrade is in progress if for some reason deemed absolutely required, contact Dell Support.

# Determine the Version of EX Series Hardware

Learn how to determine which version of EX Series hardware you have.

## EX500

The following figure illustrates the front of the EX500 server:



1. Left control panel
2. Drives (12)
3. Right control panel
4. Right release latch
5. Left release latch

**Figure 1. EX500 Server Front View**

## EX300

The following figure illustrates the front of the EX300 server:

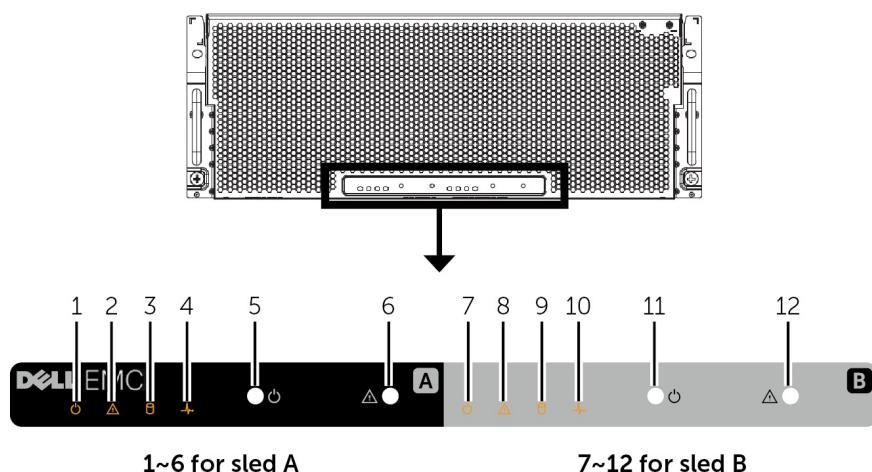


**Figure 2. EX300 Server Front View**

Item	Panels and slots	Icon	Description
1	Left control panel	N/A	Contains system health and system ID, status LED or optional iDRAC Quick Sync 2 (wireless).
2	Drive slots	N/A	Enable you to install drives that are supported on your system. For more information about drives, see the <a href="#">Technical specifications</a> section.
3	Right control panel	N/A	Contains the power button, VGA port, iDRAC Direct micro USB port and two USB 2.0 ports.
4	Information tag	N/A	The Information tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Information tag also contains the iDRAC secure default password.

## EX3000

The following figure illustrates the front of the EX3000 server:



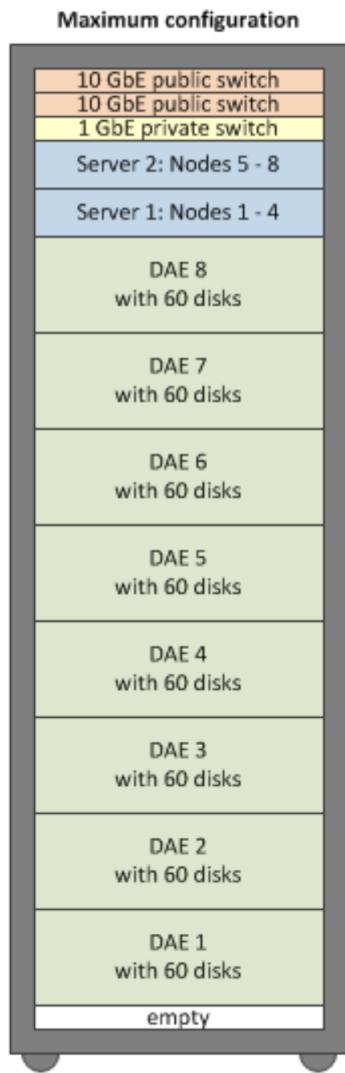
**Figure 3. EX3000 Server Front View**

**Table 1. EX3000 Server indicators, buttons, or connectors**

Item	Indicator, Button, or Connector	Description
1	Power indicator	The power indicator glows when the system is turned on.
2	ID indicator	When a system identification button is pressed, the ID indicator blinks blue to help locate a particular system within a rack.
3	Sled	An HDD fault status indicator. The indicator blinks amber if an HDD experiences an issue.
4	System board status indicator	If the system is on, and in good health, the indicator glows solid blue. The indicator blinks amber if the system is in standby, and if any issue exists (for example, a failed fan or HDD).
5	Power button	<ul style="list-style-type: none"> <li>The power button controls the PSU output to the system.</li> <li><b>(i) NOTE:</b> On ACPI-compliant operating systems (OSs), turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.</li> </ul>
6	System identification button	<ul style="list-style-type: none"> <li>The identification button can be used to locate a particular system within a rack.</li> <li>Press to switch the system ID on and off.</li> <li>If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.</li> <li>To reset iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.</li> </ul>
7	Power indicator	The power indicator glows when the system is turned on.
8	ID indicator	When a system identification button is pressed, the ID indicator blinks blue to help locate a particular system within a rack.
9	Sled B HDD fault status indicator	<ul style="list-style-type: none"> <li>The indicator blinks amber if an HDD experiences an issue.</li> <li><b>(i) NOTE:</b> Features of Sled B are for dual-node systems only.</li> </ul>
10	System board status indicator	If the system is on, and in good health, the indicator glows solid blue. The indicator blinks amber if the system is in standby, and if any issue exists (for example, a failed fan or HDD).
11	Power button	<ul style="list-style-type: none"> <li>The power button controls the PSU output to the system.</li> <li><b>(i) NOTE:</b> On ACPI-compliant operating systems (OSs), turning off the system using the power button causes the system to perform a graceful shutdown before power to the system is turned off.</li> </ul>
12	System identification button	<ul style="list-style-type: none"> <li>The identification button can be used to locate a particular system within a rack.</li> <li>Press to switch the system ID on and off.</li> <li>If the system stops responding during POST, press and hold the system ID button for more than five seconds to enter BIOS progress mode.</li> <li>To reset iDRAC (if not disabled in F2 iDRAC setup) press and hold the button for more than 15 seconds.</li> </ul>

## Gen2

The figure illustrates the front of the ECS Gen2 server:



**Figure 4. Gen2 Server Front View**

# Replacement Disk Prerequisites

Ensure that you have Secure Remote Services (SRS) configured, or contact Dell Support to order replacement disks.

## Prerequisites

If SRS is configured, the disks for replacement are automatically dispatched to a customer site. If Secure Remote Services is not configured, follow the procedure below to order replacement disks.

## Steps

1. In the ECS UI, go to **Manage > Events > Alerts**.
2. Filter the Alerts by:
  - a. Date: Time Range  
Select the time range according to the approximate date that you believe to have received the alert to replace the faulted disk.
  - b. Severity: Select **Info**
3. Export the filter results.  
The Export function exports only what is displayed on the ECS UI screen at the moment of exporting. You may have to carry out the Export function several times to yield all the results in your export output.
4. Take note of the following information ready to place the disk order:
  - Node Serial Number
  - Disk Serial Number
  - Disk Type
  - Model
  - Size

Look for alerts such as the following for the pertinent information:

Severity: Info

Description: Node SN=<service tag> Disk SN=<disk serial number> in rack=<name of rack>, node=<fqdn>, slot=<slot number> is ready for replacement. Disk Details: Type=<disk type>, Model=<vendor model>, Size=<disk size> GB, Firmware = <firmware version>.

5. Contact Dell EMC at <https://www.dell.com/support> or your support provider to order replacement parts.

# Tools

Learn about the tools required to complete the disk replacements.

- Service laptop
- Phillips #1 screwdriver
- ESD gloves or ESD wristband
- Ladder: Required to access to the disk bays, if you are replacing a disk in an EX3000 mounted in the rack at 30U or higher.

# Following ECS UI for SSD status and replacement information

Follow the ECS UI for information as to when you should replace an SSD.

## Prerequisites

Ensure that replacement disks are onsite. [Replacement Disk Prerequisites](#) on page 12 provides information.

## Steps

1. In the ECS UI, go to **Manage > Maintenance**.

This section represents all the racks that exist in a VDC and all nodes.

The **SSD Cache Disks** column provides SSD status. The **Data Disks** column provides HDD status.

Green means that disks are operating properly.

Yellow means that disks are undergoing recovery or initializing after replacement. No action is required.

Red means that disks require attention; for example, they have failed recovery.

Blue means that disks require your action; for example, you must replace the disks.

When the disk status turns to yellow, it means that the disk status is Bad, and that ECS automatically has begun the recovery process.

2. Click the node for additional information.

The ECS Maintenance page for the rack appears and shows the status for each node.

Disk	Slot	Serial #	Status	SSD Life Remaining	Description	Actions
> SSD	12	BTYG903203ZZ480BGN	⚠ Processing replace	100%	System is preparing the disk to be physically replaced because the disk is waiting idle.	
> HDD	9	VAH58AXL	✓ Healthy	Not available	Disk is operative.	
> HDD	8	VAH5GP2L	✓ Healthy	Not available	Disk is operative.	
> HDD	7	VAH397UL	✓ Healthy	Not available	Disk is operative.	
> HDD	6	VAH5GNVL	✓ Healthy	Not available	Disk is operative.	
> HDD	5	VAG8YXPL	✓ Healthy	Not available	Disk is operative.	
> HDD	4	VAH5KZRL	✓ Healthy	Not available	Disk is operative.	
> HDD	3	VAH5KNJL	✓ Healthy	Not available	Disk is operative.	
> HDD	2	VAH5M0PL	✓ Healthy	Not available	Disk is operative.	
> HDD	1	VAH5HB2L	✓ Healthy	Not available	Disk is operative.	
> HDD	0	VAH5EADL	✓ Healthy	Not available	Disk is operative.	

**Figure 5. ECS UI Maintenance Rack and Node Status**

ECS automatically refreshes the page every 30 seconds.

When the replacement preparation is complete, the disk status turns to blue and **Replace** becomes available for that disk. The screen capture below shows that the number of disks that previously were in yellow status are now in blue status:

The screenshot shows the Dell EMC ECS UI Maintenance Data Disks page. On the left, there is a navigation sidebar with various options like Dashboard, Monitor, Manage, Storage Pools, Virtual Data Center, Replication Group, Authentication, Namespace, Users, Identity and Access, Buckets, File, and Maintenance. Under Maintenance, there is a Settings section with Object Base URL, Key Management, ESRS, Alerts Policy, Event Notification, Platform Locking, and Licensing. The main content area is titled "Maintenance" and shows a table with four rows, each representing a node: columbus-moonstone.ecs.lab.emc.com, detroit-moonstone.ecs.lab.emc.com, austin-moonstone.ecs.lab.emc.com, and dallas-moonstone.ecs.lab.emc.com. Each row has three columns: "Data Disks" and "SSD Cache Disks", both showing a grid of colored icons representing disk health. A red arrow points from the bottom right towards the "Replace" button in the Actions column for the first node's SSD.

**Figure 6. ECS UI Maintenance Data Disks Blue Status**

The ECS UI **Maintenance** drill-down for that node appears. The **Replace** option becomes available.

The screenshot shows the Dell EMC ECS UI Maintenance Node Drill-Down Replace page. The left sidebar is identical to Figure 6. The main content area is titled "Maintenance" and shows a table for the "dallas-moonstone" node. The table has columns: Disk, Slot, Serial #, Status, SSD Life Remaining, and Description. The "Actions" column contains a "Replace" button. A red arrow points from the bottom right towards the "Replace" button in the Actions column for the first node's SSD.

**Figure 7. ECS UI Maintenance Node Drill-Down Replace**

When the **Replace** option becomes available, a Secure Remote Services Dial Home event automatically instructs Dell EMC to send a new disk to your site.

**(i) NOTE:**

The SSD disk undergoes a replacement process only if its health is FAILED. The read cache SSD replacement is not triggered based on a "SSD Life Remaining" threshold level.

3. Proceed with physical disk replacement step only when you have the replacement disk available for physical replacement.
  - If you do not have the replacement disks at hand, contact Dell Support and ensure that the replacement disk has been ordered. Continue when you have the replacement disk. Obtain disk information as follows:
    - In ECS UI **Maintenance**, select the disk for which you want information, and then select left-most arrow in disk row to expand the disk information.
    - In ECS UI **Manage > Events > Alerts** which is posted at the time when disk is ready for replacement.
- The Alert details are:

Look for alerts such as the following for the pertinent information:

Severity: Info

Description: Node SN=<service tag> Disk SN=<disk serial number> in rack=<name of rack>, node=<fqdn>, slot=<slot number> is ready for replacement. Disk Details: Type=<disk type>, Model=<vendor model>, Size=<disk size> GB, Firmware = <firmware version>.

  - If you have the replacement disk at hand, navigate to the node that requires the replacement disk, and that is in blue status.
4. Click **Replace**, and then click **OK** to confirm.

ECS allows replacing one disk at a time per node. After you click **Replace** for a given drive, you must place a new disk into the node before proceeding with next disk. ECS does not allow you to select **Replace** for another drive until you insert the drive for which **Replace** has already been clicked.
5. Click **OK**.

#### Next steps

Go to the section specific to the hardware type of the target node for the steps to physically replace the target SSD on the ECS appliance.

Do not replace the disk physically unless corresponding Disk Status in the ECS UI shows **Replace Disk** and Description states: **Replace the disk according to LED identity and Slot/Enclosure location. Ensure that you verify the serial number of the disk that you remove from the system against the serial number that the UI displays.**

# Replace SSDs on ECS EX500 appliance

## Topics:

- Replace the Failed Drive Overview
- Uninstalling an SSD
- Uninstalling the Drive from the Drive Carrier
- Installing a Drive into the Drive Carrier
- Installing an SSD
- Post—Disk Replacement Checks

## Replace the Failed Drive Overview

ECS supports replacing one disk at a time per node.

Complete both the UI steps of clicking **Replace**, followed immediately by the physical replacement of one disk within a node before you can follow same steps to replace another disk in the same node. Replace all disks that are ready for **Replace** in one node, and then go on to the next node.

Ensure that the target disk that you plan to physically replace is in the appropriate status. Go to ECS UI **Manage > Maintenance** and confirm that you click **Replace** for the target disk. [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

The disk LED is green. The rate of blinking is twice every 1 second, to identify the disk inside node for replacement. After the new disk is inserted, the node and disk LEDs stop blinking.

## Uninstalling an SSD

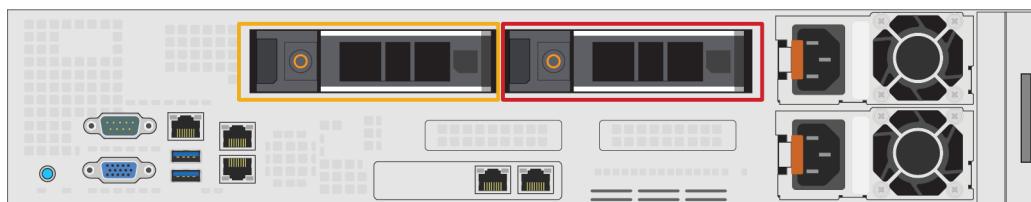
### Steps

1. Locate the faulted disk that you are going to replace.

The faulted disk should have a blinking LED. If the disk is not blinking, ensure that you are using correct node and confirm disk location.

The target node should have blue node LED blinking in the front and back of the node.

The graphic below shows the location of the SSD slots in the back of the EX500 server. The yellow-highlighted SSD slot is the read cache SSD slot. The red-highlighted SSD slot is blank.



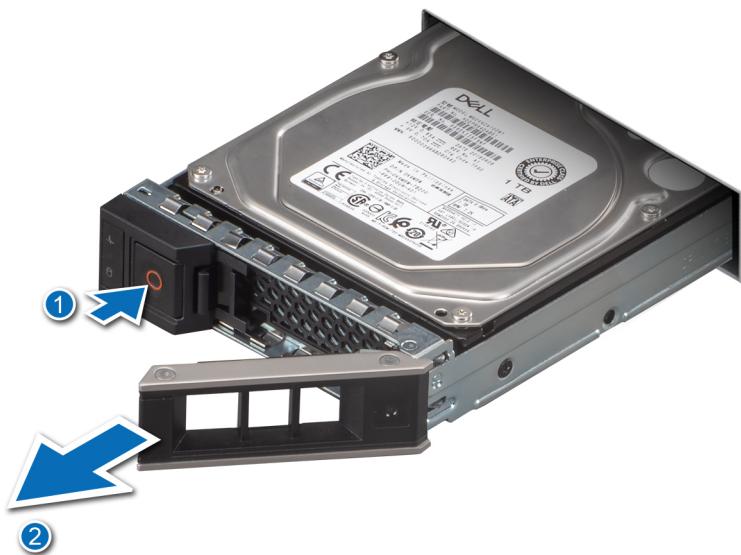
**Figure 8. EX500 SSD Slots**



- |   |                              |   |                            |
|---|------------------------------|---|----------------------------|
| 1 | Drive activity LED indicator | 2 | Drive status LED indicator |
| 3 | Drive capacity label         |   |                            |

**Figure 9. EX500 LED indicators**

2. Press the release button to open the drive carrier release handle.
  3. Holding the handle, slide the hard drive out of the hard drive slot.



**Figure 10. Uninstalling an SSD**

4. Go to **ECS UI** **Manage** > **Maintenance** and verify that the disk serial number matches the number reported for the disk you removed. If the disk serial number does not match, immediately reinsert the disk into its original slot.

# Uninstalling the Drive from the Drive Carrier

## Steps

1. Using a Phillips #1 screwdriver, uninstall the screws from the slide rails on the drive carrier.
2. Lift the drive out of the drive carrier.

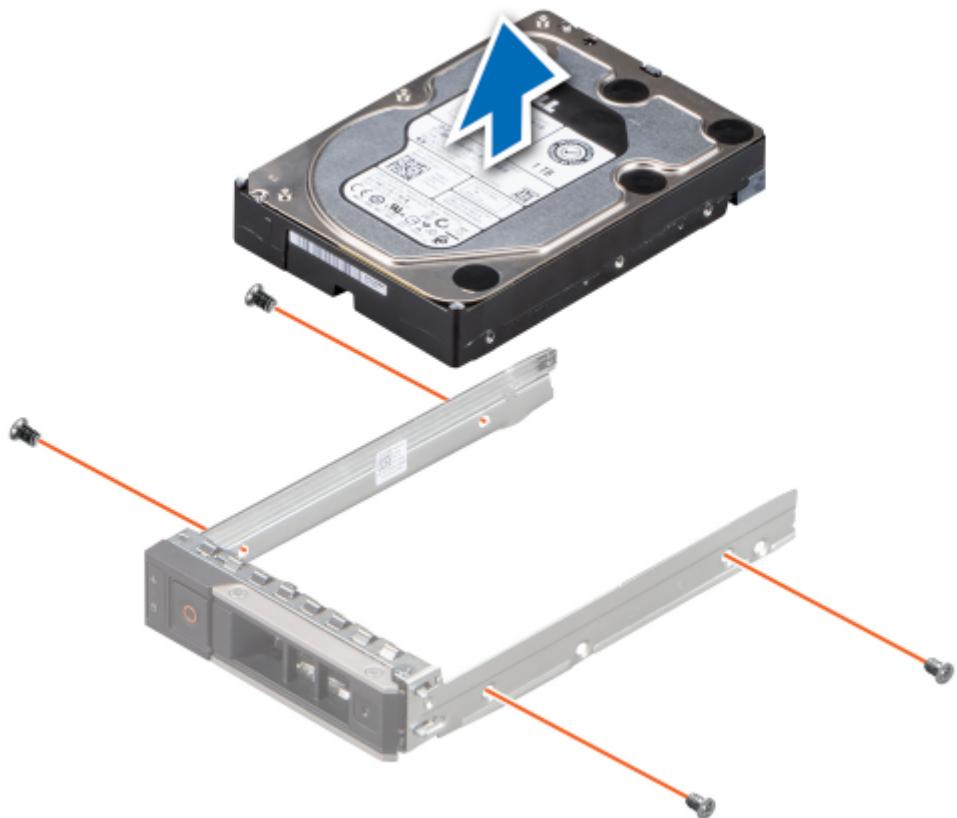
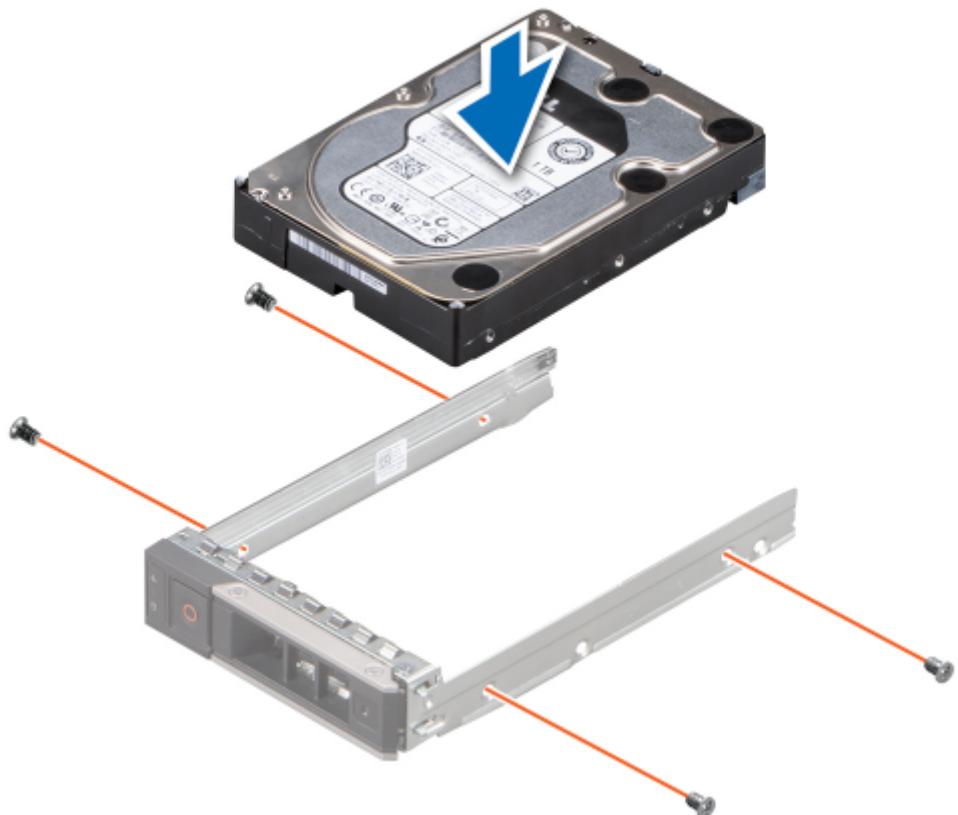


Figure 11. uninstalling the drive from the drive carrier

# Installing a Drive into the Drive Carrier

## Steps

1. Insert the replacement drive into the drive carrier with the connector end of the drive towards the back of the carrier.
2. Align the screw holes on the drive with the screw holes on the drive carrier.
3. Using a Phillips #1 screwdriver, replace the screws to secure the drive to the drive carrier.



**Figure 12. Installing a drive into the drive carrier**

## Installing an SSD

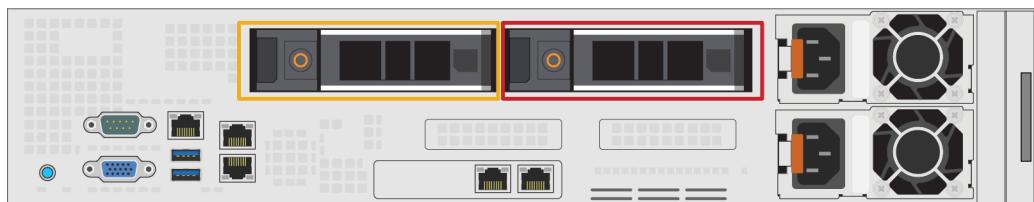
### Steps

1. Press the release button on the front of the hard drive to open the release handle.
2. Insert the hard drive into the rear of the node into specified slot and slide until the hard drive connects with the backplane.
3. Close the hard drive release handle to lock the hard drive in place.



**Figure 13. Installing an SSD**

The graphic below shows the location of the SSD slots in the back of the EX500 server. The yellow-highlighted SSD slot is the read cache SSD slot. The red-highlighted SSD slot is blank.



**Figure 14. EX500 SSD Slots**

4. If there are any additional failed drives showing as **Replace** in the ECS UI **Manage > Maintenance**, perform the replacement of the next disk drive. Step 3 of [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.  
Do not replace the next disk physically unless the corresponding Disk Status in the ECS UI shows **Replace Disk** and the Description states: **Replace the disk according to LED identity and Slot/Enclosure location. Ensure that you verify the serial number of the disk that you remove from the system against the serial number that the UI displays.**

## Post—Disk Replacement Checks

Carry out visual inspections in the ECS hardware and software once all disks are replaced in a node to ensure that the disk replacement is successful.

### Steps

In the ECS UI, go to **Manage > Maintenance**.

The disk status should be **Initializing** and eventually turn to **Healthy**.

The disk may be blinking showing normal activity, but identification LED should no longer be blinking.

You can proceed with the next disk replacement while the previous disk is still Initializing. Ensure that you check on the previous drives afterward.

# Replace SSDs on ECS EX300 appliance

## Topics:

- Replace the Failed Drives Overview
- Remove the SSD
- Remove the Drive from the Drive Carrier
- Install the Replacement Drive into the Drive Carrier
- Install the SSD
- Post—Disk Replacement Checks

## Replace the Failed Drives Overview

ECS supports replacing one disk at a time per node.

Complete both the UI steps of clicking **Replace**, followed immediately by the physical replacement of one disk within a node before you can follow same steps to replace another disk in the same node. Replace all disks that are ready for **Replace** in one node, and then go on to the next node.

Ensure that the target disk that you plan to physically replace is in the appropriate status. Go to ECS UI **Manage > Maintenance** and confirm that you click **Replace** for the target disk. [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

The disk LED is green. The rate of blinking is twice every 1 second, to identify the disk inside node for replacement. After the new disk is inserted, the node and disk LEDs stop blinking.

## Remove the SSD

### Prerequisites

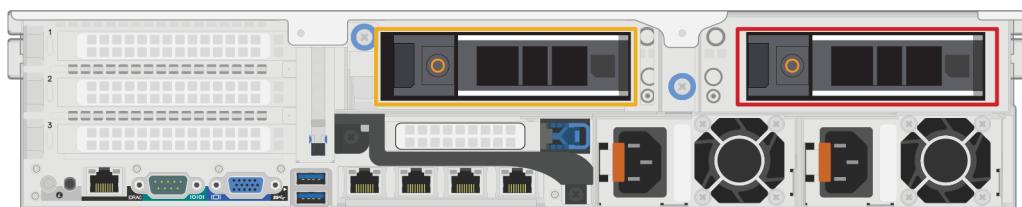
Follow all safety guidelines.

### Steps

1. Locate the faulted disk that you are going to replace.

The target node should have blue node LED blinking in the front and back of the node to help locate correct node.

The graphic below shows the location of the SSD slots in the back of the EX300 server. The yellow-highlighted slot is the read cache SSD slot. The red-highlighted slot is blank.



**Figure 15. EX300 SSD Slot Location**



- 1 Drive activity LED indicator  
2 Drive status LED indicator  
3 Drive capacity label

**Figure 16. EX300 LED indicators**

2. Press the release button to open the SSD release handle.
3. Holding the handle, slide the SSD out of the SSD slot.



**Figure 17. Removing an SSD**

4. Go to ECS UI **Manage > Maintenance** and verify that the disk serial number matches the number reported for the disk that you removed. If the disk serial number does not match, immediately reinsert the disk into its original slot.
5. If you are not replacing the SSD immediately, insert an SSD blank in the empty SSD slot to maintain proper system cooling.

# Remove the Drive from the Drive Carrier

## Prerequisites

ECS does not support mixing drives from previous generations of PowerEdge servers.

## Steps

1. Using a Phillips #1 screwdriver, remove the screws from the slide rails on the drive carrier.
2. Lift the drive out of the drive carrier.

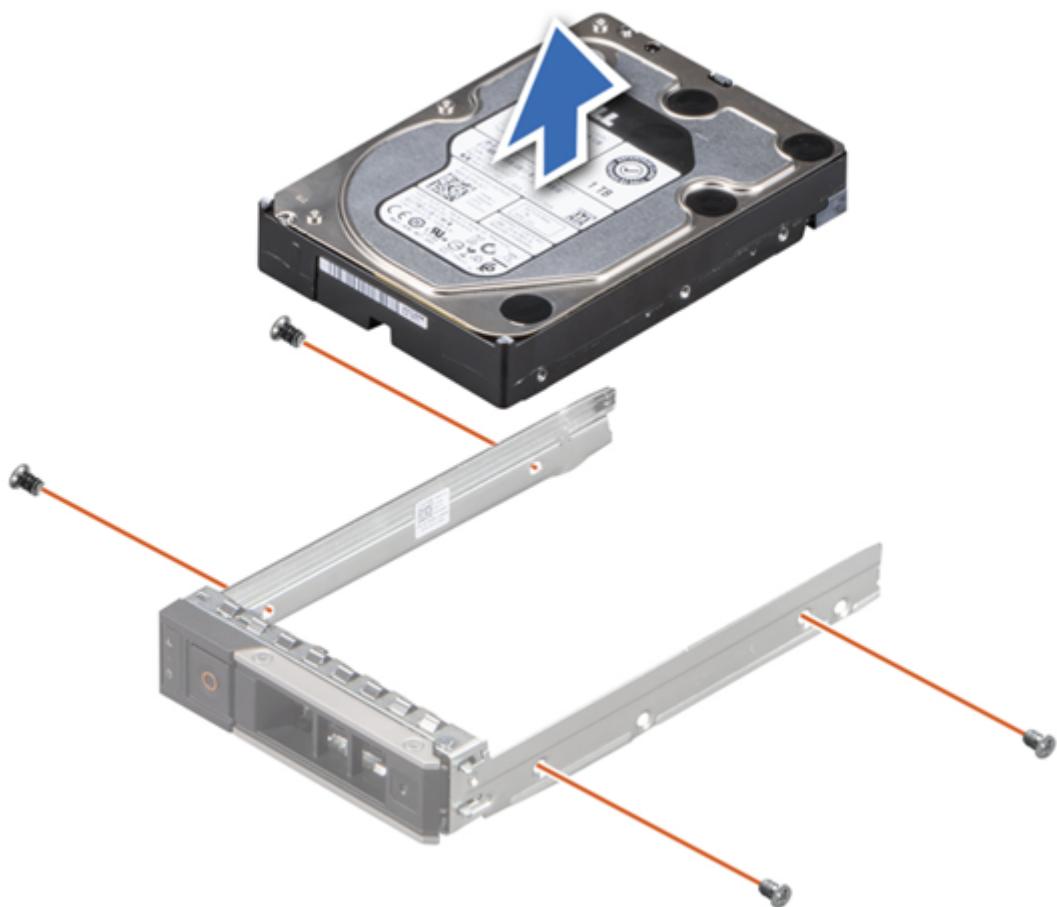
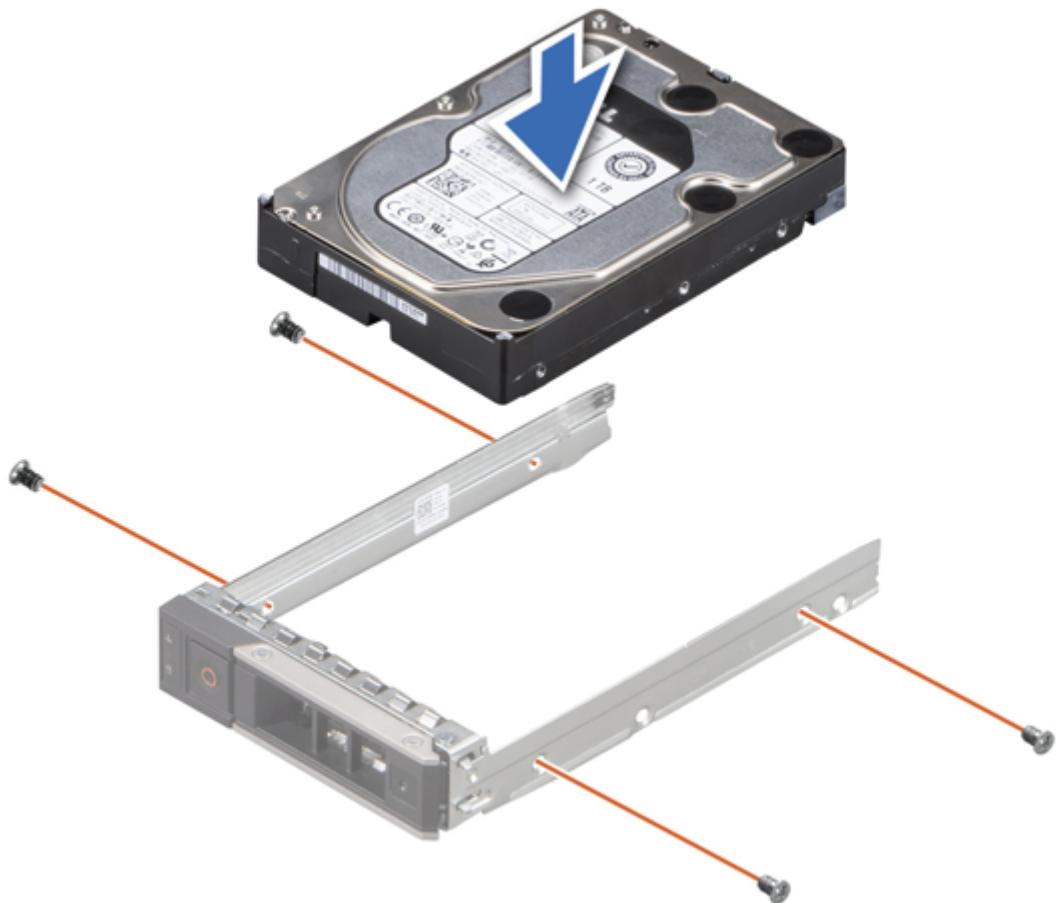


Figure 18. Removing the drive from the drive carrier

# Install the Replacement Drive into the Drive Carrier

## Steps

1. Insert the drive into the drive carrier with the connector end of the drive towards the back of the carrier.
2. Align the screw holes on the drive with the screw holes on the drive carrier.
3. Using a Phillips #1 screwdriver, replace the screws to secure the drive to the drive carrier.



**Figure 19. Install drive into drive carrier**

## Install the SSD

### Steps

1. Press the release button on the front of the SSD to open the release handle.
2. Insert the SSD into the rear of the node into specified slot and slide until the SSD connects with the backplane.
3. Close the SSD release handle to lock the SSD in place.



**Figure 20. Installing an SSD**

The graphic below shows the location of the SSD slots in the back of the EX300 server. The yellow-highlighted slot is the read cache SSD slot. The red-highlighted slot is blank.



**Figure 21. EX300 SSD Slot Location**

4. If there are any additional failed drives showing as **Replace** in the ECS UI **Manage > Maintenance**, perform the replacement of the next disk drive. Step 3 of [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

Do not replace the next disk physically unless the corresponding Disk Status in the ECS UI shows **Replace Disk** and the Description states: **Replace the disk according to LED identity and Slot/Enclosure location. Ensure that you verify the serial number of the disk that you remove from the system against the serial number that the UI displays.**

## Post—Disk Replacement Checks

Carry out visual inspections in the ECS hardware and software once all disks are replaced in a node to ensure that the disk replacement is successful.

### Steps

In the ECS UI, go to **Manage > Maintenance**.

The disk status should be **Initializing** and eventually turn to **Healthy**.

The disk may be blinking showing normal activity, but identification LED should no longer be blinking.

You can proceed with the next disk replacement while the previous disk is still Initializing. Ensure that you check on the previous drives afterward.

# Replace SSDs on ECS EX3000 appliance

## Topics:

- Replace the Failed Drives Overview
- Remove the SSD
- Install the SSD
- Post—Disk Replacement Checks

## Replace the Failed Drives Overview

ECS supports replacing one disk at a time per node.

Complete both the UI steps of clicking **Replace**, followed immediately by the physical replacement of one disk within a node before you can follow same steps to replace another disk in the same node. Replace all disks that are ready for **Replace** in one node, and then go on to the next node.

Ensure that the target disk that you plan to physically replace is in the appropriate status. Go to ECS UI **Manage > Maintenance** and confirm that you click **Replace** for the target disk. [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

The node LED blinks blue to identify the node for SSD replacement in the front and rear of the node.

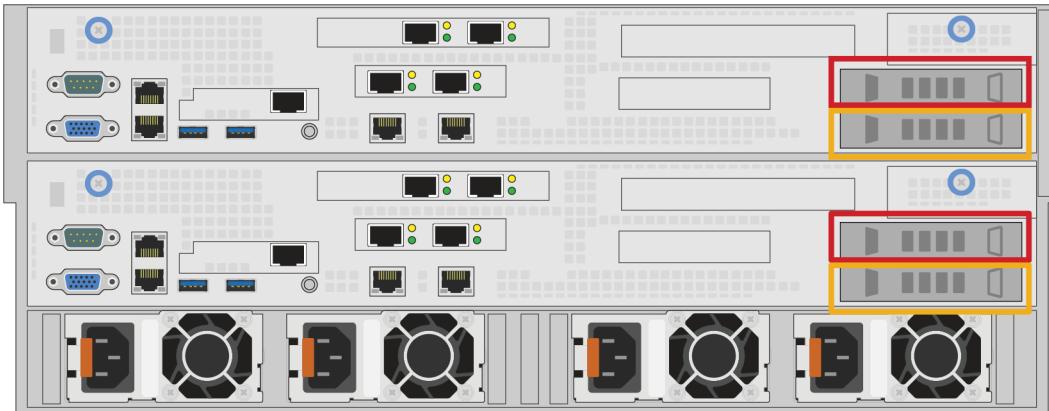
There is no LED to identify the faulted SSD. Determine the faulted SSD by the slot location in server. After the new disk is inserted, the blue node LED stops blinking.

## Remove the SSD

### Steps

1. Locate the faulted SSD.

The graphic below shows the location of the SSD slots on the back of the EX3000 server. The red-highlighted boxes are operating system drives. The yellow-highlighted boxes, bottom drives are SSD read cache drives.



**Figure 22. EX3000 SSD slot locations**

The LEDs on SSDs do not light up to identify the disk for replacement. Ensure that you use the blinking blue node light and visual identification for SSD read cache disks location from the figure above.

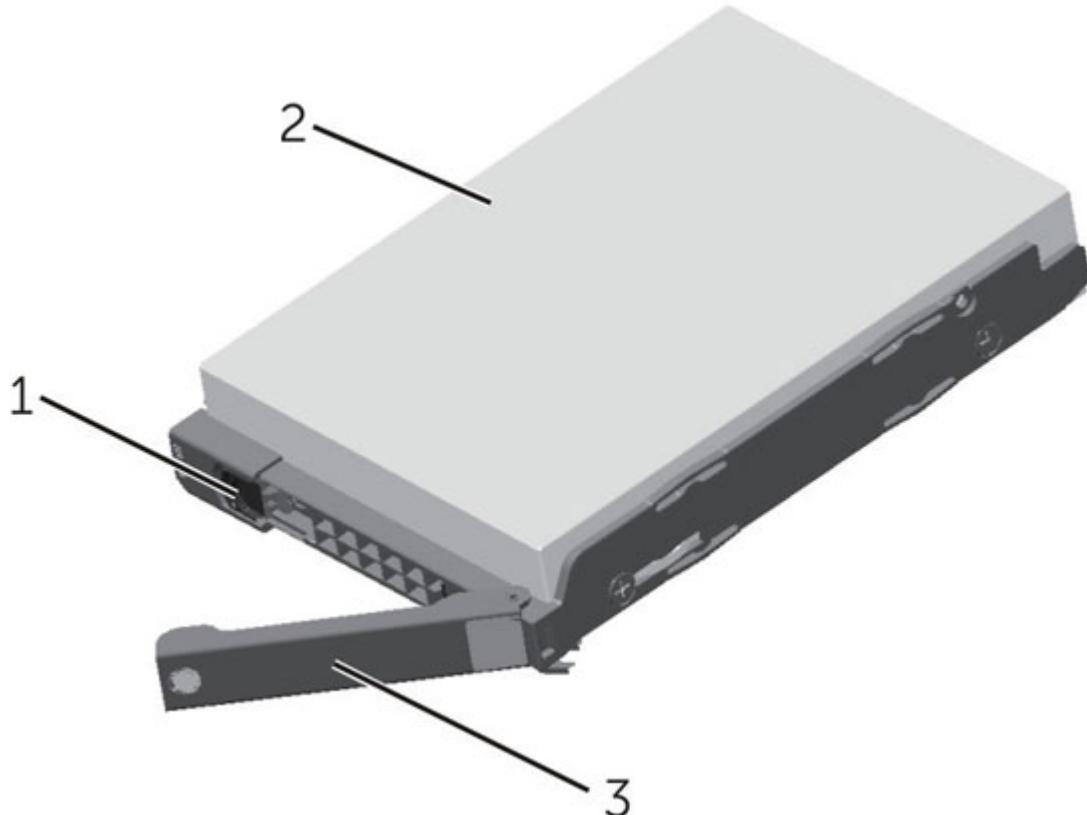
Ensure that you replace BOTTOM of the two drives in the node.

The top drives are operating system disks. The operating system disk may show activity, and look like they are blinking. Do not touch the operating system disks. If you remove the operating system disk, the node becomes inaccessible.

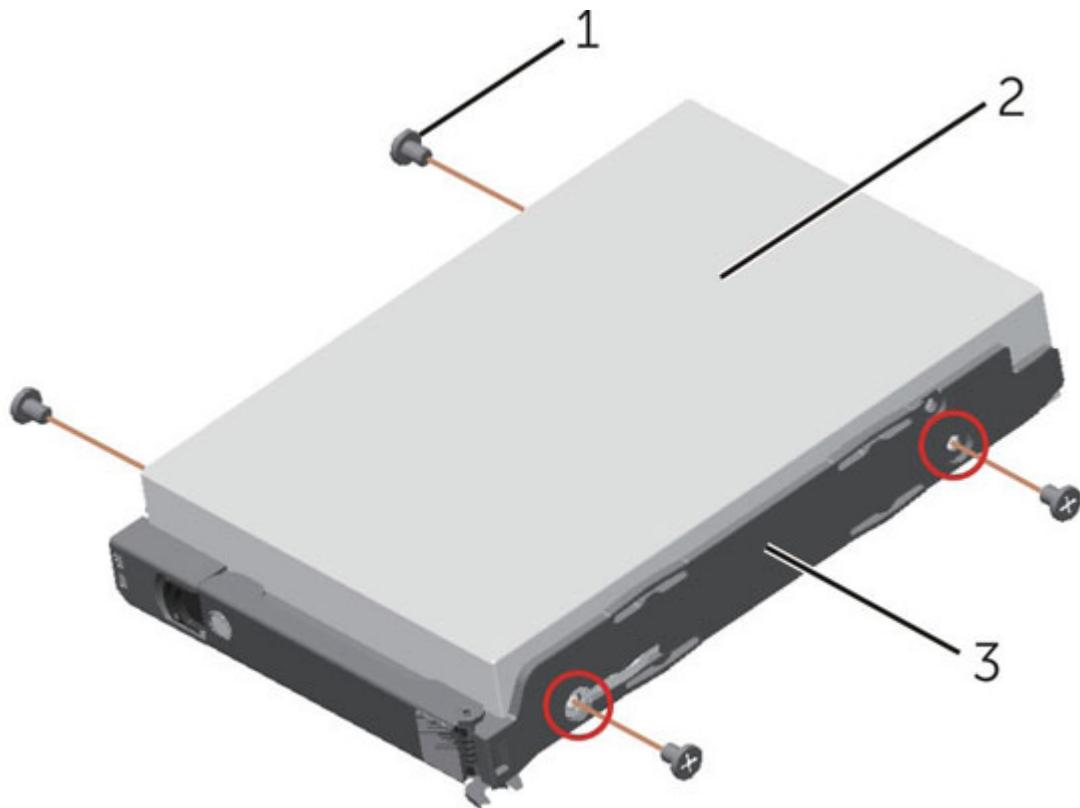
2. Press the release button to open the SSD carrier release handle.
3. Slide the SSD carrier out until it is free of the SSD slot.

 **CAUTION:** To maintain proper system cooling, all empty SSD slots must have SSD blanks installed.

4. Remove the screws from the slide rails on the SSD carrier.
5. Lift the SSD out of the SSD carrier.



Item	Description
1	Release Button
2	3.5" SSD
3	SSD Carrier Handle



Item	Description
1	Screw (4)
2	3.5" SSD
3	SSD Carrier

6. Go to ECS UI **Manage > Maintenance** and verify that the disk serial number matches the number reported for the disk you replaced. If the disk serial number does not match, immediately reinsert the disk into its original slot.

## Install the SSD

### Prerequisites

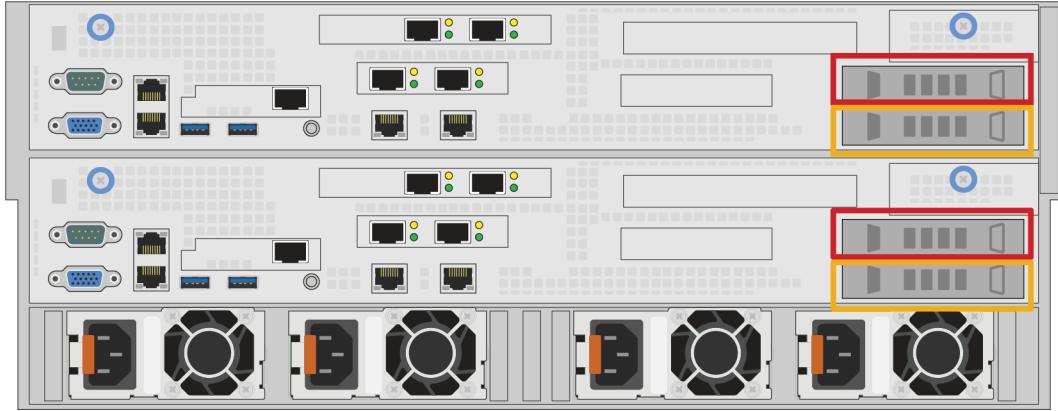
 **CAUTION:** Use only SSDs that have been tested and approved for use with the SSD backplane.

### Steps

1. Insert the SSD into the SSD carrier with the connector-end of the SSD toward the back.
2. Align the screw holes on the SSD with the set of screw holes on the SSD carrier.  
When aligned correctly, the back of the SSD is flush with the back of the SSD carrier.
3. Attach the screws to secure the SSD to the SSD carrier.
4. If an SSD blank is installed in the SSD slot, remove it.
5. Insert the SSD carrier into the back of the node into specified slot until the carrier connects with the backplane.

 **CAUTION:** Do not force or drop the SSD into the slot and backplane connectors. The backplane can be permanently damaged. Slowly and carefully lower the drive into the slot until the cam lever engages. Ensure that the cam lever on the carrier engages properly.

The graphic below shows the location of the SSD slots on the back of the EX3000 server. The red-highlighted boxes are operating system drives. The yellow-highlighted boxes are SSD read cache drives.



**Figure 23. EX3000 SSD slot locations**

6. Close the SSD carrier handle to lock the SSD in place.
7. Check the drive LED status to ensure that it is operational.
8. If there are any additional failed drives showing as **Replace** in the ECS UI **Manage > Maintenance**, perform the replacement of the next disk drive on this node. Step 3 of [Following ECS UI for SSD status and replacement information](#) on page 14 provides information. Do not replace the next disk physically unless the corresponding Disk Status in the ECS UI shows **Replace Disk** and the Description states: **Replace the disk according to LED identity and Slot/Enclosure location. Ensure that you verify the serial number of the disk that you remove from the system against the serial number that the UI displays.**

## Post—Disk Replacement Checks

Carry out visual inspections in the ECS hardware and software once all disks are replaced in a node to ensure that the disk replacement is successful.

### Steps

In the ECS UI, go to **Manage > Maintenance**.

The disk status should be **Initializing** and eventually turn to **Healthy**.

The disk may be blinking showing normal activity, but identification LED should no longer be blinking.

You can proceed with the next disk replacement while the previous disk is still Initializing. Ensure that you check on the previous drives afterward.

# Replace SSDs on ECS Gen 2 U Series appliance

## Topics:

- Replace the Failed Drives Overview
- Removing a Failed SSD
- Installing an SSD
- Post—Disk Replacement Checks

## Replace the Failed Drives Overview

ECS supports replacing one disk at a time per node.

Complete both the UI steps of clicking **Replace**, followed immediately by the physical replacement of one disk within a node before you can follow same steps to replace another disk in the same node. Replace all disks that are ready for **Replace** in one node, and then go on to the next node.

Ensure that the target disk that you plan to physically replace is in the appropriate status. Go to ECS UI **Manage > Maintenance** and confirm that you click **Replace** for the target disk. [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

The target DAE led blinks to identify the disk inside node for replacement . After the new disk is inserted, the node and disk LED turns off.

## Removing a Failed SSD

### Prerequisites

Ensure that you attach an ESD wristband to your wrist and the enclosure with the SSDs you are removing.

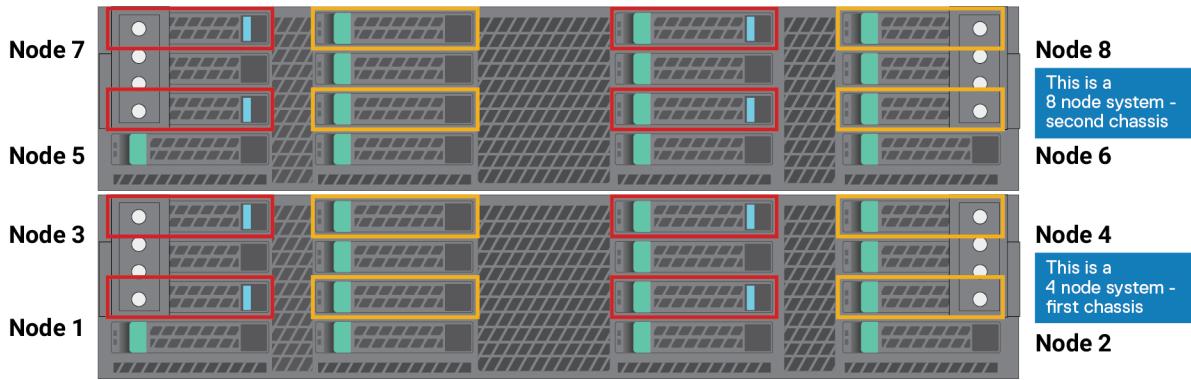
### About this task

A faulted SSD has an amber fault LED on its carrier. Generally, you should not remove an SSD unless its amber fault LED is on. Do not replace a faulted SSD until you have a replacement SSD with the same part number available.

### Steps

1. Locate the faulted SSD.

The graphic below shows the location of the SSD slots in the front of the Gen2 server. The yellow-highlighted SSD slots are the read cache SSD slots. The red-highlighted SSD slots are operating system disks.



**Figure 24. Gen2 SSD Slot Location**

2. Push the SSD release tab.
3. Lift the SSD's latch and slowly pull the SSD.
4. Place the SSD on a static-free surface.
5. Go to ECS UI **Manage > Maintenance** and verify that the SSD serial number matches the number reported for the SSD you replaced. If the SSD serial number does not match, immediately reinsert the SSD into its original slot.

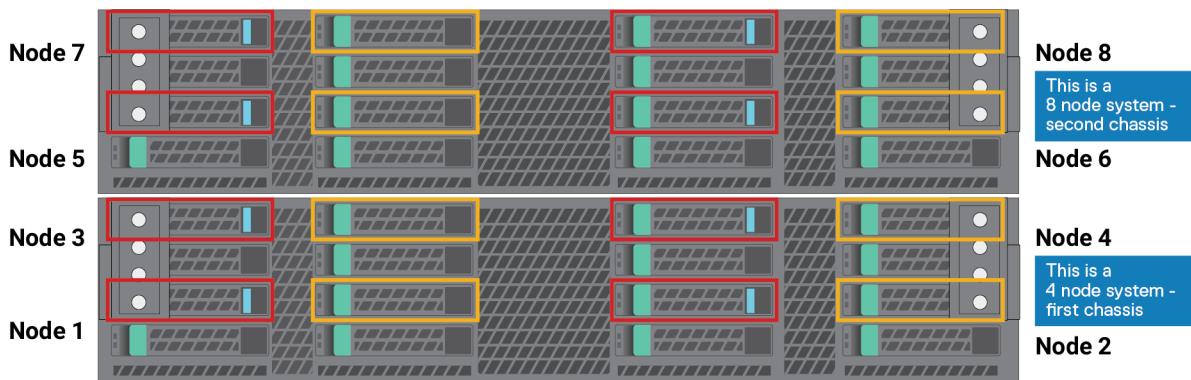
## Installing an SSD

### Prerequisites

### Steps

1. With the SSD carrier latch fully open, align the module with the guides and gently lower the SSD into the front of the node of the specified slot.

The graphic below shows the location of the SSD slots in the front of the Gen2 server. The yellow-highlighted SSD slots are the read cache SSD slots. The red-highlighted SSD slots are operating system disks.



**Figure 25. Gen2 SSD Slot Location**

The latch begins to rotate downward when its tabs meet the enclosure.

2. Push the latch tab to engage the latch.
3. When the latch is engaged, push firmly on the module to verify that the SSD is properly seated.

The SSD Active light flashes to reflect the SSD activity.

4. If there are any additional failed drives showing as **Replace** in the ECS UI **Manage > Maintenance**, perform the replacement of the next SSD drive on this node. Step 3 of [Following ECS UI for SSD status and replacement information](#) on page 14 provides information.

Do not replace the next SSD physically unless the corresponding SSD Status in the ECS UI shows **Replace Disk** and the Description states: **Replace the disk according to LED identity and Slot/Enclosure location. Ensure that you verify the serial number of the disk that you remove from the system against the serial number that the UI displays.**

# Post—Disk Replacement Checks

Carry out visual inspections in the ECS hardware and software once all disks are replaced in a node to ensure that the disk replacement is successful.

## Steps

In the ECS UI, go to **Manage > Maintenance**.

The disk status should be **Initializing** and eventually turn to **Healthy**.

The disk may be blinking showing normal activity, but identification LED should no longer be blinking.

You can proceed with the next disk replacement while the previous disk is still Initializing. Ensure that you check on the previous drives afterward.