

Replacing a failed drive for SolidFire storage nodes

You can hot-swap a failed solid-state drive (SSD) with a replacement drive.

Before you begin

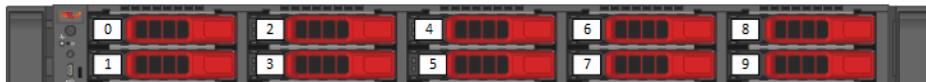
- You have a replacement drive.
- You have an electrostatic discharge (ESD) wristband, or you have taken other antistatic precautions.
- You have contacted NetApp Support to verify that the SSD failed and for help with the proper resolution procedure. You will need the service tag or serial number when you call NetApp Support. Support will work with you to get a replacement drive according to your Service Level Agreement.

About this task

The instructions in this document apply to the following SolidFire storage node models:

- SF2405
- SF3010
- SF4805
- SF6010
- SF9605
- SF9608
- SF9010
- SF19210
- SF38410

The following figure shows the placement of the drives in an SF9605 chassis:



Note: The above figure is an example. SF9608 has a different drive layout that includes only eight drives that are numbered one through eight, from left to right.

Slot 0 holds the metadata drive for the node. If you are replacing the drive in slot 0, you must attach the sticker included in the shipping box on the replacement drive, so that you can identify it separately from the rest. SF3010 is an exception, because metadata is kept on the internal serial advanced technology attachment (SATA) dual inline memory module (DIMM).

Related concepts

[Contacting NetApp Support for SolidFire](#) on page 4

Rules for handling drives

You must take care to avoid damaging the drives while removing and replacing them.

- Prevent electrostatic discharge (ESD):
 - Keep the drive in the ESD bag until you are ready to install it.
 - Do not insert a metal tool or knife into the ESD bag.
Open the ESD bag by hand or cut the top off with a pair of scissors.
 - Keep the ESD bag and any packing materials in case you must return a drive later.
 - Always wear an ESD wrist strap grounded to an unpainted surface on your chassis.
- Handle drives carefully:
 - Always use both hands when removing, installing, or carrying a drive.
 - Never force a drive into the chassis.
 - Do not stack drives on top of each other.
 - Protect the drives from excessive shock, because shock might damage the components of the drives.
 - Always use approved packaging when shipping drives.

Removing a failed drive from the cluster

The SolidFire system puts a drive in a failed state if the drive's self-diagnostics tells the node it has failed or if communication with the drive stops for five and a half minutes or longer. The system displays a list of the failed drives. You must remove a failed drive from the failed drive list in NetApp Element software.

Steps

1. In the Element UI, click **Cluster > Drives**.
2. Click **Failed** to view the list of failed drives.
3. Note the slot number of the failed drive.

You need this information to locate the failed drive in the chassis.

4. Remove the failed drive using one of the following methods:

| Option | Steps |
|-----------------------------|---|
| To remove individual drives | <ol style="list-style-type: none">a. Click Actions for the drive you want to remove.b. Click Remove. |
| To remove multiple drives | <ol style="list-style-type: none">a. Select all the drives you want to remove, and click Bulk Actions.b. Click Remove. |

After you remove the failed drive from the cluster, you can remove and replace the drive from the chassis.

Replacing failed drives from the chassis

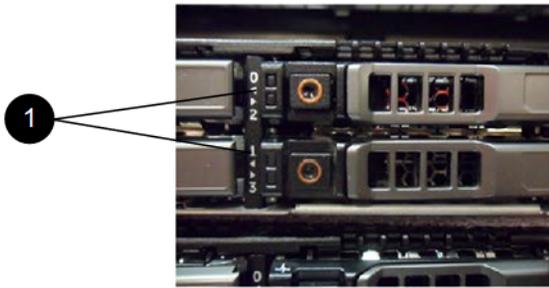
After you remove a failed drive from the failed drive list in the Element user interface (UI), you are ready to physically replace the failed drive from the chassis.

Before you begin

- You have removed the failed drive from the cluster by using the Element UI.
- You have obtained the slot number of the failed drive from the Element UI.
- You have reviewed [Rules for handling drives](#).

Steps

1. Unpack the replacement drive, and place it on a flat, static-free surface near the rack.
Save the packing materials for when you return the failed drive to NetApp.
2. Match the slot number of the failed drive from the Element UI with the number on the chassis.
The following figure is an example to show the numbering of the drive slots:



| | |
|---|--------------------|
| 1 | Drive slot numbers |
|---|--------------------|

3. Press the red circle on the drive you want to remove to release the drive.
The latch clicks open.
4. Slide the drive out of the chassis, and place it on a static-free, level surface.
5. Press the red circle on the replacement drive before you slide it into the slot.
6. Insert the replacement drive, and press the red circle to close the latch.
7. Notify NetApp Support about the drive replacement.
NetApp Support will provide instructions for returning the failed drive.

Related concepts

- [Rules for handling drives](#) on page 2
- [Contacting NetApp Support for SolidFire](#) on page 4

Adding a drive to the cluster

After you install a new drive in the chassis, it registers as available. You must add the drive to the cluster using the Element UI before it can participate in the cluster.

Steps

1. In the Element UI, click **Cluster > Drives**.
2. Click **Available** to view the list of available drives.
3. Choose one of the following options to add drives:

| Option | Steps |
|--------------------------|---|
| To add individual drives | <ol style="list-style-type: none">a. Click the Actions button for the drive you want to add.b. Click Add. |
| To add multiple drives | <ol style="list-style-type: none">a. Select the check boxes of the drives to add, and click Bulk Actions.b. Click Add. |

Where to find additional information

You can learn more about using and managing SolidFire storage systems in NetApp's documentation library.

[NetApp Element Software Documentation Library](#)

Includes documentation for various releases of Element software.

[NetApp SolidFire Resources page](#)

Provides resources about SolidFire, including links to video content and technical reports.

Contacting NetApp Support for SolidFire

If you need help with or have questions or comments about NetApp SolidFire products, contact NetApp Support.

- Web: mysupport.netapp.com
- Phone:
 - 888.4.NETAPP (888.463.8277) (US and Canada)
 - 00.800.44.638277 (EMEA/Europe)
 - +800.800.80.800 (Asia/Pacific)

Copyright

Copyright © 2019 NetApp, Inc. All rights reserved. Printed in the U.S.

No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

Data contained herein pertains to a commercial item (as defined in FAR 2.101) and is proprietary to NetApp, Inc. The U.S. Government has a non-exclusive, non-transferrable, non-sublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b).

Trademark information

NETAPP, the NETAPP logo, and the marks listed on the NetApp Trademarks page are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.

<http://www.netapp.com/us/legal/netapptmlist.aspx>

How to send comments about documentation and receive update notifications

You can help us to improve the quality of our documentation by sending us your feedback. You can receive automatic notification when production-level (GA/FCS) documentation is initially released or important changes are made to existing production-level documents.

If you have suggestions for improving this document, send us your comments by email.

doccomments@netapp.com

To help us direct your comments to the correct division, include in the subject line the product name, version, and operating system.

If you want to be notified automatically when production-level documentation is released or important changes are made to existing production-level documents, follow Twitter account @NetAppDoc.

You can also contact us in the following ways:

- NetApp, Inc., 495 East Java Drive, Sunnyvale, CA 94089 U.S.
- Telephone: +1 (408) 822-6000

- Fax: +1 (408) 822-4501
- Support telephone: +1 (888) 463-8277