



DIMMs

E-Series Systems

NetApp
December 19, 2022

Table of Contents

DIMMs	1
Requirements for replacing an EF300 or EF600 DIMM	1
Replace DIMMs in EF300 or EF600	1

DIMMs

Requirements for replacing an EF300 or EF600 DIMM

Before you replace a DIMM in an EF300 or EF600 storage array, review the requirements and considerations.

You must replace a DIMM when a memory mismatch is present, or you have a failed DIMM. Be sure to verify the configuration of your EF300 or EF600 controller to ensure the correct DIMM size is replaced.



Be aware that the DIMMs in your storage array are fragile; improper handling can lead to damage.

Follow these rules to avoid damaging the DIMMs in your storage array:

- Prevent electrostatic discharge (ESD):
 - Keep the DIMM in the ESD bag until you are ready to install it.
 - Open the ESD bag by hand or cut the top off with a pair of scissors. Do not insert a metal tool or knife into the ESD bag.
 - Keep the ESD bag and any packing materials in case you must return a DIMM later.



Always wear an ESD wrist strap grounded to an unpainted surface on your storage enclosure chassis.

- Handle DIMMs carefully:
 - Always use two hands when removing, installing, or carrying a DIMM.
 - Never force a DIMM into a shelf, and use gentle, firm pressure to completely engage the latch.
 - Always use approved packaging when shipping DIMMs.
- Avoid magnetic fields. Keep DIMMs away from magnetic devices.

Replace DIMMs in EF300 or EF600

You can replace a DIMM in an EF300 or EF600 array.

About this task

To replace a DIMM, you must verify the cache size of your controller, place the controller offline, remove the controller, remove the DIMMs, and install the new DIMMs in your controller. Then you can bring your controller back online and verify the storage array is working properly.

Before you begin

- Review [Requirements for replacing an EF300 or EF600 DIMM](#).
- Make sure that no volumes are in use or that you have a multipath driver installed on all hosts using these volumes.

What you'll need

- A replacement DIMM.

- An ESD wristband, or you have taken other antistatic precautions.
- A flat, static free work area.
- Labels to identify each cable that is connected to the controller canister.
- A management station with a browser that can access SANtricity System Manager for the controller. (To open the System Manager interface, point the browser to the controller's domain name or IP address.)

Step 1: Determine if you need to replace a DIMM

Verify the cache size of your controller before replacing the DIMMS.

Steps

1. Access the Storage Array profile for the controller. From SANtricity System Manager, go to **Support > Support Center**. From the Support Resources page, select **Storage Array Profile**.
2. Scroll down or use the Search field to locate the **Data Cache Module** information.
3. If one of the following is present, note the DIMM's location and continue with remaining procedures in this section to replace the DIMMs on your controller:
 - A failed DIMM, or a DIMM reporting **Data Cache Module** as not optimal.
 - A DIMM with a mismatched **Data Cache Module** capacity.

Step 2: Place controller offline

Place the controller offline so you can safely remove and replace the DIMMs.

Steps

1. From SANtricity System Manager, review the details in the Recovery Guru to confirm that there is an issue with a mismatched memory and to ensure no other items must be addressed first.
2. From the Details area of the Recovery Guru, determine which DIMM to replace.
3. Back up the storage array's configuration database using SANtricity System Manager.

If a problem occurs when you remove a controller, you can use the saved file to restore your configuration. The system will save the current state of the RAID configuration database, which includes all data for volume groups and disk pools on the controller.

- From System Manager:
 - a. Select **Support > Support Center > Diagnostics**.
 - b. Select **Collect Configuration Data**.
 - c. Click **Collect**.

The file is saved in the Downloads folder for your browser with the name, **configurationData-
<arrayName>-<dateTime>.7z**.

4. If the controller is not already offline, take it offline now using SANtricity System Manager.
 - a. Select **Hardware**.
 - b. If the graphic shows the drives, select **Show back of shelf** to show the controllers.
 - c. Select the controller that you want to place offline.
 - d. From the context menu, select **Place offline**, and confirm that you want to perform the operation.



If you are accessing SANtricity System Manager using the controller you are attempting to take offline, a SANtricity System Manager Unavailable message is displayed. Select **Connect to an alternate network connection** to automatically access SANtricity System Manager using the other controller.

5. Wait for SANtricity System Manager to update the controller's status to offline.



Do not begin any other operations until after the status has been updated.

6. Select **Recheck** from the Recovery Guru, and confirm that the OK to remove field in the Details area displays Yes, indicating that it is safe to remove this component.

Step 3: Remove controller canister

You remove the failed controller canister so you can replace your DIMMs with new ones.

Steps

1. Put on an ESD wristband or take other antistatic precautions.
2. Label each cable that is attached to the controller canister.
3. Disconnect all the cables from the controller canister.



To prevent degraded performance, do not twist, fold, pinch, or step on the cables.

4. Confirm that the Cache Active LED on the back of the controller is off.
5. Squeeze the handles on either side of the controller, and pull back until it releases from the shelf.



6. Using two hands and the handles, slide the controller canister out of the shelf. When the front of the controller is free of the enclosure, use two hands to pull it out completely.



Always use two hands to support the weight of a controller canister.



7. Place the controller canister on a flat, static-free surface.

Step 4: Remove DIMMs

If there is a memory mismatch present, replace the DIMMs in your controller.

Steps

1. Remove the controller canister's cover by unscrewing the single thumbscrew and lifting the lid open.
2. Confirm that the green LED inside the controller is off.

If this green LED is on, the controller is still using battery power. You must wait for this LED to go off before removing any components.

3. Locate the DIMMs on your controller.
4. Note the orientation of the DIMM in the socket so that you can insert the replacement DIMM in the proper orientation.



A notch at the bottom of the DIMM helps you align the DIMM during installation.

5. Slowly push apart on the two DIMM ejector tabs on either side of the DIMM to eject the DIMM from its slot, and then slide it out of the slot.



Carefully hold the DIMM by the edges to avoid pressure on the components on the DIMM circuit board.

The number and placement of system DIMMs depends on the model of your system.

Step 5: Install new DIMMs

Install a new DIMM to replace the old one.

Steps

1. Hold the DIMM by the corners, and align it to the slot.

The notch among the pins on the DIMM should line up with the tab in the socket.

2. Insert the DIMM squarely into the slot.

The DIMM fits tightly in the slot, but should go in easily. If not, realign the DIMM with the slot and reinsert it.



Visually inspect the DIMM to verify that it is evenly aligned and fully inserted into the slot.

3. Push carefully, but firmly, on the top edge of the DIMM until the latches snap into place over the notches at the ends of the DIMM.



DIMMs fit tightly. You might need to gently press on one side at a time and secure with each tab individually.



Step 6: Reinstall controller canister

After installing the new DIMMs, reinstall the controller canister into the controller shelf.

Steps

1. Lower the cover on the controller canister and secure the thumbscrew.
2. While squeezing the controller handles, gently slide the controller canister all the way into the controller shelf.



The controller audibly clicks when correctly installed into the shelf.



3. Reconnect all the cables.

Step 7: Complete DIMMs replacement

Place the controller online, collect support data, and resume operations.

Steps

1. Place controller online.
 - a. In System Manager, navigate to the Hardware page.
 - b. Select **Show back of controller**.
 - c. Select the controller with the replaced DIMMs.
 - d. Select **Place online** from the drop-down list.
2. As the controller boots, check the controller LEDs.

When communication with the other controller is reestablished:

- The amber Attention LED remains on.
 - The Host Link LEDs might be on, blinking, or off, depending on the host interface.
3. When the controller is back online, confirm that its status is Optimal and check the controller shelf's Attention LEDs.

If the status is not Optimal or if any of the Attention LEDs are on, confirm that all cables are correctly seated and the controller canister is installed correctly. If necessary, remove and reinstall the controller canister.



If you cannot resolve the problem, contact technical support.

4. Click **Hardware › Support › Upgrade Center** to ensure that the latest version of SANtricity OS is installed.

As needed, install the latest version.

5. Verify that all volumes have been returned to the preferred owner.
 - a. Select **Storage › Volumes**. From the **All Volumes** page, verify that volumes are distributed to their preferred owners. Select **More › Change ownership** to view volume owners.
 - b. If volumes are all owned by preferred owner continue to Step 6.
 - c. If none of the volumes are returned, you must manually return the volumes. Go to **More › Redistribute volumes**.
 - d. If there is no Recovery Guru present or if following the Recovery Guru steps the volumes are still not returned to their preferred owners contact support.
6. Collect support data for your storage array using SANtricity System Manager.
 - a. Select **Support › Support Center › Diagnostics**.
 - b. Select **Collect Support Data**.
 - c. Click **Collect**.

The file is saved in the Downloads folder for your browser with the name, **support-data.7z**.

What's next?

Your DIMM replacement is complete. You can resume normal operations.

Copyright information

Copyright © 2022 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, 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) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.