Troubleshoot nodes

Element Software

NetApp
April 17, 2024

This PDF was generated from https://docs.netapp.com/us-en/element-software/storage/task_troubleshoot_power_down_a_cluster.html on April 17, 2024. Always check docs.netapp.com for the latest.

Table of Contents

Troubleshoot nodes 1
For more information 1
Power down a cluster 1

Troubleshoot nodes

You can remove nodes from a cluster for maintenance or replacement. You should use the NetApp Element UI or API to remove nodes before taking them offline.

An overview of the procedure to remove storage nodes is as follows:

- Ensure that there is sufficient capacity in the cluster to create a copy of the data on the node.
- Remove drives from the cluster by using the UI or the RemoveDrives API method.

  This results in the system migrating data from the node's drives to other drives in the cluster. The time this process takes is dependent on how much data must be migrated.

- Remove the node from the cluster.

Keep the following considerations in mind before you power down or power up a node:

- Powering down nodes and clusters involves risks if not performed properly.

  Powering down a node should be done under the direction of NetApp Support.

- If a node has been down longer than 5.5 minutes under any type of shutdown condition, Double Helix data protection begins the task of writing single replicated blocks to another node to replicate the data. In this case, contact NetApp Support for help with analyzing the failed node.
- To safely reboot or power down a node, you can use the Shutdown API command.
- If a node is in a down, or in an off state, you must contact NetApp Support before bringing it back online.
- After a node is brought back online, you must add the drives back to the cluster, depending on how long it has been out of service.

For more information

Replacing a failed SolidFire chassis

Replacing a failed H600S series node

Power down a cluster

Perform the following procedure to power down an entire cluster.

Steps

1. (Optional) Contact NetApp Support for assistance with completing the preliminary steps.
2. Verify that all I/O has stopped.
3. Disconnect all iSCSI sessions:
   a. Navigate to the management virtual IP (MVIP) address on the cluster to open the Element UI.
   b. Note the nodes listed in the Nodes list.
   c. Run the Shutdown API method with the halt option specified on each Node ID in the cluster.

When you restart the cluster, you must follow certain steps to verify that all nodes come online:

1. Verify that all Critical severity and `volumesOffline` cluster faults have been resolved.
2. Wait for 10 to 15 minutes for the cluster to settle.
3. Start bringing up the hosts to access the data.

If you want to allow more time when powering on nodes and verifying that they are healthy after maintenance, contact technical support for assistance with delaying data synchronization to prevent unnecessary bin syncing.

Find more information

How to gracefully shut down and power on a NetApp Solidfire/HCI storage cluster

Copyright information

Copyright © 2024 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.