



Manual nondisruptive upgrade of a two-node MetroCluster configuration in ONTAP 9.2 or earlier using the CLI

ONTAP 9

aherbin
May 06, 2021

Table of Contents

Manual nondisruptive upgrade of a two-node MetroCluster configuration in ONTAP 9.2 or earlier using the
CLI 1

Manual nondisruptive upgrade of a two-node MetroCluster configuration in ONTAP 9.2 or earlier using the CLI

You can upgrade ONTAP nondisruptively for a two-node MetroCluster configuration. This method has several steps: initiating a negotiated switchover, updating the cluster at the “failed” site, initiating switchover, and then repeating the process on the cluster at the other site.

This procedure is for two-node MetroCluster configurations running ONTAP 9.2 or earlier only.

+ Do not use this procedure if you have a four-node MetroCluster configuration.

+ If you have a two-node MetroCluster configuration running ONTAP 9.3 or later, perform an [automated nondisruptive upgrade using System Manager](#).

1. Set the privilege level to advanced, entering **y** when prompted to continue: `set -privilege advanced`

The advanced prompt (***>**) appears.

2. On the cluster to be upgraded, install the new ONTAP software image as the default: `system node image update -package package_location -setdefault true -replace-package true`

```
cluster_B::*> system node image update -package
http://www.example.com/NewImage.tgz -setdefault true -replace-package
true
```

3. Verify that the target software image is set as the default image: `system node image show`

The following example shows that **NewImage** is set as the default image:

```
cluster_B::*> system node image show
```

Node	Image	Is Default	Is Current	Version	Install Date

node_B_1					
	OldImage	false	true	X.X.X	MM/DD/YYYY TIME
	NewImage	true	false	Y.Y.Y	MM/DD/YYYY TIME

2 entries were displayed.

4. If the target software image is not set as the default image, then change it: `system image modify {-node * -iscurrent false} -isdefault true`
5. Verify that all cluster SVMs are in a health state: `metrocluster vservers show`

6. On the cluster that is not being updated, initiate a negotiated switchover: `metrocluster switchover`

The operation can take several minutes. You can use the `metrocluster operation show` command to verify that the switchover is completed.

In the following example, a negotiated switchover is performed on the remote cluster ("cluster_A"). This causes the local cluster ("cluster_B") to halt so that you can update it.

```
cluster_A::> metrocluster switchover

Warning: negotiated switchover is about to start. It will stop all the
data
        Vservers on cluster "cluster_B" and
        automatically re-start them on cluster
        "cluster_A". It will finally gracefully shutdown
        cluster "cluster_B".
Do you want to continue? {y|n}: y
```

7. Verify that all cluster SVMs are in a health state: `metrocluster vserver show`
8. Resynchronize the data aggregates on the "surviving" cluster: `metrocluster heal -phase aggregates`

After upgrading MetroCluster IP configurations to ONTAP 9.5 or later, the aggregates will be in a degraded state for a short period before resynchronizing and returning to a mirrored state.

```
cluster_A::> metrocluster heal -phase aggregates
[Job 130] Job succeeded: Heal Aggregates is successful.
```

9. Verify that the healing operation was completed successfully: `metrocluster operation show`

```
cluster_A::> metrocluster operation show
Operation: heal-aggregates
State: successful
Start Time: MM/DD/YYYY TIME
End Time: MM/DD/YYYY TIME
Errors: -
```

10. Resynchronize the root aggregates on the "surviving" cluster: `metrocluster heal -phase root-aggregates`

```
cluster_A::> metrocluster heal -phase root-aggregates
[Job 131] Job succeeded: Heal Root Aggregates is successful.
```

11. Verify that the healing operation was completed successfully: `metrocluster operation show`

```
cluster_A::> metrocluster operation show
Operation: heal-root-aggregates
State: successful
Start Time: MM/DD/YYYY TIME
End Time: MM/DD/YYYY TIME
Errors: -
```

12. On the halted cluster, boot the node from the LOADER prompt: `boot_ontap`
13. Wait for the boot process to finish, and then verify that all cluster SVMs are in a health state: `metrocluster vservers show`
14. Perform a switchback from the “surviving” cluster: `metrocluster switchback`
15. Verify that the switchback was completed successfully: `metrocluster operation show`

```
cluster_A::> metrocluster operation show
Operation: switchback
State: successful
Start Time: MM/DD/YYYY TIME
End Time: MM/DD/YYYY TIME
Errors: -
```

16. Verify that all cluster SVMs are in a health state: `metrocluster vservers show`
17. Repeat all previous steps on the other cluster.
18. Verify that the MetroCluster configuration is healthy:
- a. Check the configuration: `metrocluster check run`

```
cluster_A::> metrocluster check run
```

```
Last Checked On: MM/DD/YYYY TIME
```

Component	Result
-----	-----
nodes	ok
lifs	ok
config-replication	ok
aggregates	ok

```
4 entries were displayed.
```

Command completed. Use the "metrocluster check show -instance" command or sub-commands in "metrocluster check" directory for detailed results.

To check if the nodes are ready to do a switchover or switchback operation, run "metrocluster switchover -simulate" or "metrocluster switchback -simulate", respectively.

- b. If you want to view more detailed results, use the metrocluster check run command: `metrocluster check aggregate showmetrocluster check config-replication showmetrocluster check lif show`metrocluster check node show`
- c. Set the privilege level to advanced: `set -privilege advanced`
- d. Simulate the switchover operation: `metrocluster switchover -simulate`
- e. Review the results of the switchover simulation: `metrocluster operation show`

```
cluster_A::~*> metrocluster operation show
```

```
Operation: switchover
```

```
State: successful
```

```
Start time: MM/DD/YYYY TIME
```

```
End time: MM/DD/YYYY TIME
```

```
Errors: -
```

- f. Return to the admin privilege level: `set -privilege admin`
- g. Repeat these substeps on the other cluster.

You should perform any post-upgrade tasks.

Related information

[MetroCluster Disaster recovery](#)

Copyright Information

Copyright © 2021 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.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

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.