



Automated nondisruptive using the CLI

ONTAP 9

aherbin
May 05, 2021

This PDF was generated from https://docs.netapp.com/us-en/ontap/upgrade/task_upgrade_andu_cli.html on May 13, 2021. Always check docs.netapp.com for the latest.

Table of Contents

Automated nondisruptive using the CLI 1

Automated nondisruptive using the CLI

You can use the command line interface (CLI) to verify that the cluster can be upgraded nondisruptively, install the target ONTAP image on each node, and then, execute an upgrade in the background.

If you do not plan to monitor the progress of the upgrade process, it is a good practice to [request EMS notifications of errors that might require manual intervention](#).

- You must have met the upgrade preparation requirements.
- For each HA pair, each node should have one or more ports on the same broadcast domain.

When a set of nodes is upgraded during a batch upgrade, the LIFs are migrated to the HA partner nodes. If the partners do not have any ports in the same broadcast domain, then the LIF migration fails.

- If you are upgrading from ONTAP 9.3 to 9.7, you must have obtained the software image for 9.5 and 9.7.
- If you are upgrading from ONTAP 9.5 to 9.9.1, you must have obtained the software image for 9.7 and 9.9.1.

The cluster image validate command checks the cluster components to validate that the upgrade can be completed nondisruptively, and then provides the status of each check and any required action you must take before performing the software upgrade.



Modifying the setting of the storage failover modify-auto-giveback command option before the start of an automatic nondisruptive upgrade (ANDU) has no impact on the upgrade process. The ANDU process ignores any preset value to this option during the takeover/giveback required for the update. For example, setting -autogiveback to false prior to beginning ANDU does not interrupt the automatic upgrade before giveback.

1. Delete the previous ONTAP software package: `cluster image package delete -version previous_ONTAP_Version`
2. Download the target ONTAP software package: `cluster image package get -url location`



If you are upgrading from ONTAP 9.3 to 9.7, download the software package for ONTAP 9.5, and then use the same command to download the software package for 9.7. If you are upgrading from ONTAP 9.5 to 9.9.1, download the software package for ONTAP 9.7, and then use the same command to download the software package for 9.9.1.

```
cluster1::> cluster image package get -url  
http://www.example.com/software/9.7/image.tgz
```

```
Package download completed.  
Package processing completed.
```

3. Verify that the software package is available in the cluster package repository: `cluster image package show-repository`

```
cluster1::> cluster image package show-repository
Package Version  Package Build Time
-----
9.7              MM/DD/YYYY 10:32:15
```

4. Verify that the cluster is ready to be upgraded nondisruptively: `cluster image validate -version package_version_number`

- If you are upgrading a two-node or four-node MetroCluster configuration, you must run this command on both clusters before proceeding.
- If you are upgrading from ONTAP 9.3 to 9.7, use the 9.7 package for verification. You do not need to validate the 9.5 package separately.
- If you are upgrading from ONTAP 9.5 to 9.9.1, use the 9.9.1 package for verification. You do not need to validate the 9.7 package separately.

```
cluster1::> cluster image validate -version 9.7
```

```
WARNING: There are additional manual upgrade validation checks that must
be performed after these automated validation checks have completed...
```

5. Monitor the progress of the validation: `cluster image show-update-progress`

6. Complete all required actions identified by the validation.

7. Generate a software upgrade estimate: `cluster image update -version package_version_number -estimate-only`

The software upgrade estimate displays details about each component to be updated, and the estimated duration of the upgrade.

8. Perform the software upgrade: `cluster image update -version package_version_number`

- If you are upgrading from ONTAP 9.3 to 9.7, use the 9.7 package_version_number in the above command.
- If you are upgrading from ONTAP 9.5 to 9.9.1, use the 9.9.1 package_version_number in the above command.
- For any MetroCluster configuration, except a 2-node MetroCluster system, the upgrade process starts simultaneously on both of the clusters (the disaster recovery cluster and the production cluster) after the user provides a confirmation. For a 2-node MetroCluster system, the update is started first on the disaster recovery site, that is, the site where the upgrade is not initiated. After the update is fully completed on the disaster recovery site, the upgrade begins on the production site.
- If the cluster consists of 2 through 6 nodes, a rolling upgrade is performed. If the cluster consists of 8 or more nodes, a batch upgrade is performed by default. If desired, you can use the `-force-rolling` parameter to specify a rolling upgrade instead.
- After completing each takeover and giveback, the upgrade waits for 8 minutes to enable client applications to recover from the pause in I/O that occurs during the takeover and giveback. If your environment requires more or less time for client stabilization, you can use the `-stabilize-minutes` parameter to specify a different amount of stabilization time.

```

cluster1::> cluster image update -version 9.7

Starting validation for this update. Please wait..

It can take several minutes to complete validation...

WARNING: There are additional manual upgrade validation checks...

Pre-update Check      Status      Error-Action
-----
...
20 entries were displayed

Would you like to proceed with update ? {y|n}: y
Starting update...

cluster-1::>

```

9. Display the cluster update progress: `cluster image show-update-progress`



If you are upgrading a 4-node or 8-node MetroCluster configuration, the `cluster image show-update-progress` command only displays the progress for the node on which you run the command. You must run the command on each node to see individual node progress.

10. Verify that the upgrade was completed successfully on each node.

```

cluster1::> cluster image show-update-progress

Update Phase      Status      Estimated      Elapsed
Duration          Duration
-----
Pre-update checks  completed   00:10:00       00:02:07
Data ONTAP updates completed   01:31:00       01:39:00
Post-update checks completed   00:10:00       00:02:00
3 entries were displayed.

Updated nodes: node0, node1.

cluster1::>

```

11. Trigger an AutoSupport notification: `autosupport invoke -node * -type all -message "Finishing_NDU"`

If your cluster is not configured to send AutoSupport messages, a copy of the notification is saved locally

Related information

[Launch Active IQ](#)

[Active IQ documentation](#)

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.