

Technical writing samples

How you update a cluster nondisruptively	1
Planning and preparing for the update	1
Performing an update	2
Rolling update	2
Batch update	2
Performing a nondisruptive cluster update	3
Steps	4
Obtaining Data ONTAP software images	4
About this task	4
Steps	5
Updating the cluster nondisruptively	5
Before you begin	5
About this task	6
Steps	6
New and changed features in OnCommand System Manager 8.3.1	10
OnCommand System Manager issues	13

Creative writing sample

The village by the sea	14
------------------------	----

Technical writing samples

How you update a cluster nondisruptively

You can use System Manager to update a cluster nondisruptively to a specific Data ONTAP version. In a nondisruptive update, you have to select a Data ONTAP image, validate that your cluster is ready for the update, and then perform the update.

During the nondisruptive update, the cluster remains online and continues to serve data during the update.

Planning and preparing for the update

As part of planning and preparing for the cluster update, you have to obtain the version of Data ONTAP image to which you want to update the cluster from the NetApp Support Site, select the software image, and then perform a validation. The pre-update validation verifies whether the cluster is ready for an update to the selected version.

If validation finishes with errors and warnings, you have to resolve them by performing the remedial actions and ensure that the cluster components are ready for the update. For example, during the pre-update check, if a warning is displayed that there are offline aggregates present in the cluster, you must navigate to the aggregate page and change the status of all the offline aggregates to online.

Performing an update

When you update the cluster, either the entire cluster is updated or nodes in an HA pair are updated. As part of the update, a validation is run again to verify that the cluster is ready for the update. A rolling or batch update is performed, depending on the number of nodes in the cluster.

Rolling update

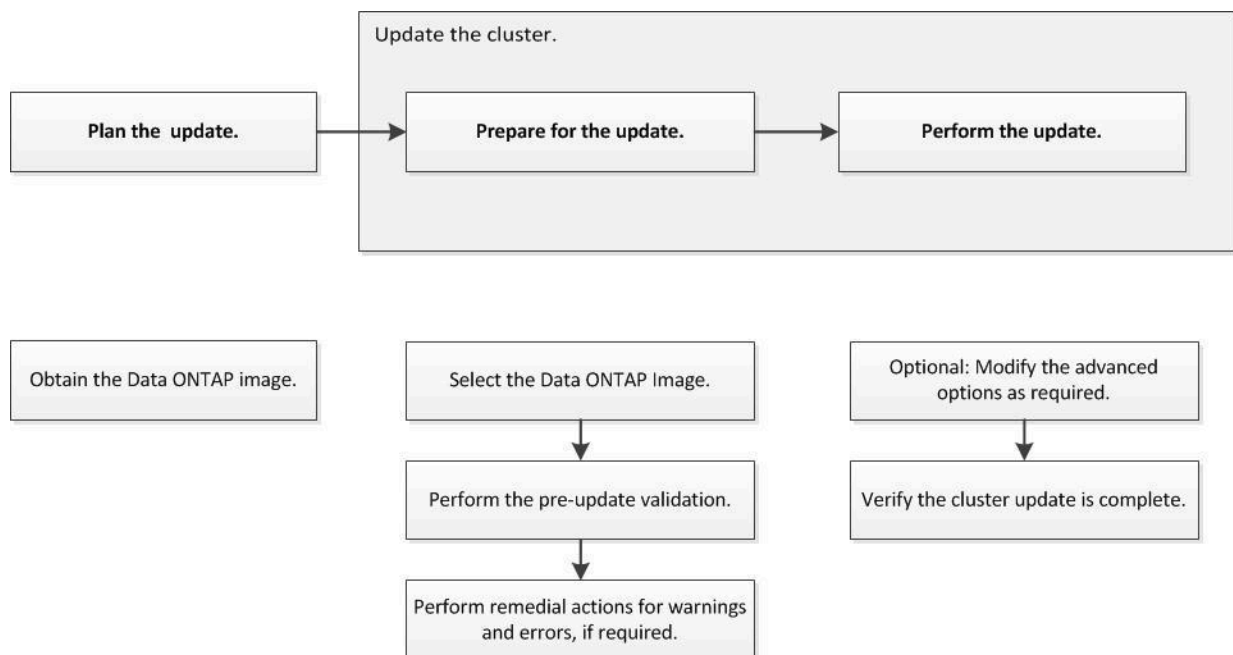
One of the nodes is taken offline and updated while the partner node takes over its storage. A rolling update is performed for a cluster that consists of two or more nodes. This is the default and only method of update for clusters with less than eight nodes.

Batch update

The cluster is separated into two batches, each of which contains multiple HA pairs. A batch update is performed for a cluster that consists of eight or more nodes. In such clusters, you can perform either a batch update or a rolling update. By default, a batch update is performed.

Performing a nondisruptive cluster update

You can use System Manager to update a cluster nondisruptively to a specific Data ONTAP version. In a nondisruptive update, you have to select a Data ONTAP image, validate that your cluster is ready for the update, and then perform the update.



Steps

1. Obtaining Data ONTAP software images on page 6

You must copy a software image from the NetApp Support Site to an HTTP or FTP server on your network so that nodes can access the images.

2. Updating the cluster nondisruptively on page 7

You can use System Manager to update a cluster or individual nodes in HA pairs running Data ONTAP 8.3.1 to a particular Data ONTAP version

without disrupting access to client data.

Obtaining Data ONTAP software images

You must copy a software image from the NetApp Support Site to an HTTP or FTP server on your network so that nodes can access the images.

About this task

To upgrade the cluster to the target release of Data ONTAP, you need access to software images. Software images, firmware version information, and the latest firmware for your platform model are available on the NetApp Support Site. Note the following important information:

- Software images are specific to platform models. Be sure to obtain the correct image for your cluster.
- Software images include the latest version of system firmware that was available when a given version of Data ONTAP was released.

Steps

1. Locate the target Data ONTAP software in the **Software Downloads** area of the NetApp Support Site.
2. Copy the software image (for example, 831_q_image.tgz) from the NetApp Support Site to the directory on the HTTP or FTP server from which the image will be served.

Updating the cluster nondisruptively

You can use System Manager to update a cluster or individual nodes in HA pairs running Data ONTAP 8.3.1 to a particular Data ONTAP version without disrupting access to client data.

Before you begin

- All the nodes must be in HA pairs.

You cannot update a single-node cluster.

- All the nodes must be healthy.
- The clusters must be running Data ONTAP 8.3.1.

You can only update to versions later than Data ONTAP 8.3.1 by using System Manager.

- You must have copied the software image from the NetApp Support Site to an HTTP or FTP server on your network so that the nodes can access the image.

Obtaining Data ONTAP software images on page 6

About this task

- If you try to perform other tasks from System Manager while updating the node hosting the cluster-management LIF, an error message might be displayed.

You must wait for the update to finish before performing any operations.

- If the cluster consists of less than eight nodes, a rolling update is performed; if there are eight or more nodes in the cluster, a batch update is performed.

In a rolling update, each node in the cluster is updated at a time. In a batch update, multiple nodes are updated in parallel.

Steps

1. Select the software image of the Data ONTAP version to which you want to update your system:
 - a. Expand the Cluster hierarchy in the left navigation pane.
 - b. In the navigation pane, click Cluster Update.
 - c. In Cluster Update tab, perform one of the following operations:

If you want to...	Then...
Add a new software image	I. Click Add. II. In the Add a New Software Image dialog box, enter the URL of the HTTP or FTP server on which you have saved the image downloaded from the NetApp Support Site. III. Click Add.
Select the available image	Choose one of the listed images.

2. Click Next.
3. Click **Validate** to run the pre-update validation checks to verify whether the cluster is ready for an update.

The validation operation checks the cluster components to validate that the

update can be completed nondisruptively, and then provides the status of each check along with any remedial action you must perform before performing the software update, if required.

Important: You must perform all the required remedial actions for the errors before proceeding with the update. Although you can ignore the remedial actions for the warnings, the recommended practice is to perform them before proceeding with the update.

4. Click **Next**.
5. Optional: Click **Advanced Options** and perform the following steps:
 - a. In the **Advanced Options** area, perform one of the following operations:

If you want to...	Then...
Update the entire cluster	Ensure that the Update the entire cluster checkbox is selected. By default, this check box is selected.
Update particular HA pairs	Clear the Update the entire cluster check box, and then select the HA pair that you want to update.

- b. Specify a different stabilization time if your environment requires more or less time for client stabilization.

Stabilization time specifies the time period for which the update process should wait after completing a task to enable client applications to recover. It should be in the range of 1 through 60 minutes; it is set to 8 minutes by default.

- c. Select the **Pause after every step (not recommended)** check box to automatically pause the update after every major step.

Pausing an update after every major step enables you to review the

status of the update and then manually resume the update. This option is disabled by default and the update is not paused unless an error is encountered or you manually pause the update.

- d. Select the Force Rolling Update check box to perform a rolling update.

This check box is displayed only if your cluster consists of eight or more nodes.

You can enable this option if the entire cluster is selected or if there are four or more HA pairs for update.

6. Click Update.

Validation is performed again.

- When the validation is complete, a table is displayed, which shows the status of each check and any required remedial action that you have to perform before proceeding.
- If the validation is completed with warnings, you can select the Continue update with warnings check box, and then click Continue.

When the validation is complete and the update is in progress, the update might be paused due to errors. You can click the error to view the details and then perform the remedial actions before resuming the update.

After the update is completed successfully, you are redirected to the login page of System Manager.

7. Verify that the cluster is successfully updated to the selected version by clicking Cluster > Cluster Update > Update History and viewing the details.

New and changed features in OnCommand System Manager 8.3.1

You should be familiar with the features that were added or changed in the OnCommand System Manager 8.3.1 release.

FC SAN optimized AFF simplification

You can use the simplified LUN creation procedure to create one or more LUNs during the initial setup of an FC SAN optimized All Flash FAS cluster for Oracle, SQL, and other application types.

You can also view information related to cluster performance from the Cluster Performance tab in the dashboard window.

Automated nondisruptive update

You can non-disruptively update a cluster to a specific Data ONTAP version. You can select a Data ONTAP image, validate whether your cluster is ready for the update, and then perform the update. During the nondisruptive update, the cluster remains online and continues to serve data.

Dashboard enhancements

The dashboard window has been enhanced to display cluster details and cluster performance. The Cluster Details tab provides information about important alerts, aggregate and volume capacity, Storage Virtual Machine (SVM) performance, cluster details, disk details, network details, and other activities for a cluster. The dashboard contains multiple panels that provide cumulative at-a-glance information about your cluster.

The Cluster Performance tab is available only for a cluster on a SAN optimized All Flash FAS system and provides performance-related information about the All Flash FAS cluster.

Managing All Flash Optimized systems

You can use System Manager to manage various operations for All Flash Optimized aggregates.

Entry-level platform models and All Flash FAS (AFF) models support dividing disks into two partitions—a smaller one that is used for the root aggregate and a larger one for data aggregates. System Manager recognizes the data partition and allows you to create and manage a data aggregate using the data partition. This feature reduces the disk allocation requirement for the root aggregate and increases usable storage.

Also, inline compression is enabled by default for volumes created on All Flash Optimized aggregates.

Managing IPspaces

You can create an IPspace to configure a single cluster for client access from more than one administratively separate network domain, even when the clients use the same IP address from the subnet range. This capability enables you to separate client traffic for privacy and security.

Manual IP address selection during SVM creation

The SVM creation workflow is enhanced to enable you to manually enter an IP address when creating LIFs. During the SVM protocol configuration, you can select the subnet and then enter a valid manual IP address. The specified IP address will be added to the subnet if it is not already present in the subnet range.

DDNS configuration

Dynamic DNS (DDNS) enables a cluster to automatically update the name server in the DNS server. Without DDNS updates, you must manually add DNS information (DNS name and IP address) to DNS servers when a new system is brought online or when existing DNS information changes. Manually adding DNS information can be slow and error-prone and might result in a long downtime during disaster recovery.

SMB encryption

You can enable SMB encryption for CIFS at the SVM level or on selected SMB shares for enhanced security while transferring data using the SMB protocol.

Name service switch enhancements

The Services tab in the Edit Storage Virtual Machine dialog box has been enhanced to enable you to specify the name service switch sources for the required database types. You can also specify the order in which they should be consulted to retrieve name service information.

License entitlement risk status

You can view the status of any license entitlement risk for license packages in the Licenses window of System Manager. Entitlement risk can be a high, medium, no risk, or unknown, depending on the license package you chose to install.

Related information

[Clustered Data ONTAP 8.3 Cluster Management Using OnCommand System Manager](#)

OnCommand System Manager issues

You should review the known issues and limitations with features related to OnCommand System Manager.

You should also review the fixed issues in this release.

Related information

[NetApp KB Article 3014691: Fixed issues in OnCommand System Manager 8.3.1](#)

LUNs are automatically unmapped from an initiator group when deleting an initiator

When you delete an initiator from an initiator group (igroup), LUNs that are mapped

to the igroup might automatically be unmapped. As a result, the LUN becomes inaccessible to other initiators that are added to this igroup.

Related information

[NetApp Bugs Online Bug ID 786277: LUNs are automatically unmapped from an initiator group while deleting an initiator](#)

System Manager does not support volume type “del”

Because System Manager does not support or display volumes of type del, the number of volumes displayed might be inconsistent with the number of volumes displayed through the command-line interface.

Creative writing sample

The village by the sea

Gamcheon-dong in Busan is a lesson in how public art can save a ghetto

(Originally published on [The Hindu Business Line](#), an Indian Business News Paper with a daily circulation of over 20000.)

Brightly painted murals on neat rows of houses. Narrow, hilly lanes with their sidewalk dotted with pansies, petunias and gerberas in huge ceramic pots. It's hard to believe that Gamcheon-dong's roots are embedded in the horrors of war and poverty.

My visit to the Gamcheon Cultural Village in Busan can be attributed to that crazy part of me, which is addicted to Korean dramas. This is a place where many

K-dramas have been filmed. Let's just say that the obsession took a backseat as soon as I arrived here, because Gamcheon-dong is fabulous on its own. Also known as 'Santorini on the South Sea' and 'Korea's Machu Picchu', the former shanty town got a new lease of life in 2009 through the murals that were painted on every house here. Gamcheon-dong sits on a hill that overlooks the sea.

The history of the village is as riveting as the art that covers every inch of it. During the Korean War (1950-53), when most of South Korea fell into the hands of the North, the Pusan Perimeter was the only stretch that evaded capture. Busan became the provisional capital of South Korea and a staggering number of impoverished refugees moved there. Many of them settled down in the suburbs, including Gamcheon-dong, which is located on the Bandal hill, between Mt Cheonmasan and Mt Ami.

Around a couple of hundred wooden houses sprung up in the area. The structures were basic, and stone slabs were placed on the roofs to prevent them from being blown away by the strong winds from the sea.

Gamcheon-dong's war-scarred residents sought solace in taegeukdo, a religion founded in 1918 by Cho Cholje. The message of millenarianism struck a chord among the residents of this poorest of Busan's suburbs.

The condition of the rest of the country, mauled by communist North Korea during the three-year war, wasn't very different either. However, the Miracle on the Han River (coined after the 'Miracle on the Rhine' phrase used to describe the 'economic rebirth of West Germany after World War II') changed South Korea's position in the world arena. In a span of 30 years after the War, the country transformed into a 'developed' nation, after ranking behind Ghana and Congo in the '60s.

Gamcheon-dong, however, had to wait longer for its makeover from the government. In 2009, the ministry of culture, sports and tourism turned its attention to the village with the launch of its 'Dreaming of Machu Picchu in Busan' project. The box-shaped houses in the village were already painted in pastel shades, but

further beautification was done under the project. Apart from painting murals, artists created colourful sidewalks on the serpentine alleys. Gradually, the residents joined hands with the artists. The fruits of the happy collaboration is there for everyone to see and admire.

The wooden houses are a thing of the past. It's concrete all around, but the multi-coloured structures give Gamcheon-dong a Legoland-like appearance. Narrow flights of stairs — some of which can be challenging for the not-so-fit tourist — often lead to pretty cafés and restaurants, and souvenir shops that look as attractive as the paper ballerinas and fans on their shelves.

The murals often mirror the streets of Gamcheon-dong. One shoebox-shaped house — something that may remind you of Salvador Dali's 'The Persistence of Memory' — is a favourite with many tourists. There is a sculpture of the Little Prince and his fennec fox seated on a railing and gazing at the sea. No tourist can resist this photo-op. Red plastic hearts with locks dance in the air on a terrace while the House of Peace, one of the mini-galleries or exhibition spaces here, has pieces of art that depict hope in the face of odds.

Adorning a stark concrete wall are words from 'Nostalgia', a poem by the early 20th-century poet and translator of English poetry Jeong Ji-yong. The words, in Korean characters, are arranged in the shape of a large fish in stainless steel. Colourful birds with human heads on a rooftop ('People and Birds') depict the desire to break free and take flight.

A few paces from here is the Little Museum, which stands against the backdrop of a painted blue sky with cottony clouds. Inside is a collection of 70-odd household items from the early days of Gamcheon-dong. Photographs of the post-War rudimentary wooden shacks speak volumes about the humble beginnings of the village. The old bathhouse, with a scattering of human sculptures, is now a community centre.

Schools of fish — in more colours than you can count — keep you company as you negotiate the maze of alleys. These are not just works by individual artists ('Fish Swimming Through the Alley', for example, is a collection of fish paintings on small planks arranged to look like a big fish slicing through waters). The fish are also the arrowheads you need to follow to avoid losing your way — and self — in the labyrinth of the little streets.

Travel Log

Getting there

There are daily flights to Busan from New Delhi via Hong Kong, Shanghai and Seoul.

To get to Gamcheon-dong: Take the subway Line 1 (orange line) and get down at Toseong Station. Take Exit 6 and walk to the Busan National University Hospital Cancer Centre bus stop. From there take the Village shuttle minibuses.

Take a taxi from Toseong station if you are more than three people; it will be cheaper.

Tip

Purchase a T-money card for all your travel needs in South Korea. You can swipe it in buses, subway, taxis, and also use it at convenience stores. The other option is to purchase a day subway pass that costs 5,000 won (₹300 approx) for unlimited rides in the subway for a day.