Ensure that the new controllers are set up correctly

ONTAP Systems

Barb Einarsen, Amanda Stroman, Paula Carrigan
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Ensure that the new controllers are set up correctly

To ensure correct setup, you must enable the HA pair. You must also verify that node3 and node4 can access each other's storage and that neither owns data LIFs belonging to other nodes on the cluster. In addition, you must ensure that node3 owns node1's aggregates and that node4 owns node2's aggregates, and that the volumes for both nodes are online.

Steps

1. After the post-checks of node2, the storage failover and cluster HA pair for the node2 cluster are enabled. When the operation is done, both nodes show as completed and the system performs some cleanup operations.
2. Verify that storage failover is enabled by entering using the following command:

   `storage failover show`

   The following example shows the output of the command when storage failover is enabled:

   ```
   cluster::> storage failover show
                       Takeover
   Node      Partner   Possible   State Description
   --------- -------   --------   ------------------
   node3     node4     true       Connected to node4
   node4     node3     true       Connected to node3
   ```

3. Verify that node3 and node4 belong to the same cluster by using the following command and examining the output:

   `cluster show`

4. Verify that node3 and node4 can access each other's storage by using the following command and examining the output:

   `storage failover show -fields local-missing- disks,partner-missing-disks`

5. Verify that neither node3 nor node4 owns data LIFs home-owned by other nodes in the cluster by using the following command and examining the output:

   `network interface show`

   If neither node3 or node4 owns data LIFs home-owned by other nodes in the cluster, revert the data LIFs to their home owner by using the following command:

   `network interface revert`

6. Verify that node3 owns the aggregates from node1 and that node4 owns the aggregates from node2 by using the following commands:

```
storage aggregate show -owner-name <node3>

storage aggregate show -owner-name <node4>
```

7. Determine whether any volumes are offline by using the following commands:

```
volume show -node <node3> -state offline

volume show -node <node4> -state offline
```

8. If any volumes are offline, compare them with the list of offline volumes that you captured in the section Prepare the nodes for upgrade, and bring online any of the offline volumes, as required, by using the following command, once for each volume:

```
volume online -vserver <vserver-name> -volume <volume_name>
```

9. Install new licenses for the new nodes by using the following command for each node:

```
system license add - license-code <license_code,license_code,license_code…>
```

   The license-code parameter accepts a list of 28 upper-case alphabetic character keys. You can add one license at a time, or you can add multiple licenses at once, separating each license key by a comma.

10. Remove all of the old licenses from the original nodes by using one of the following commands:

```
system license clean-up -unused -expired

system license delete -serial-number <node_serial_number> -package <licensable_package>
```

    - Delete all expired licenses by using the following command:

      ```
      system license clean-up -expired
      ```

    - Delete all unused licenses by using the following command:

      ```
      system license clean-up -unused
      ```

    - Delete a specific license from a cluster by using the following commands on the nodes:

      ```
      system license delete -serial-number <node1 serial number> -package *

      system license delete -serial-number <node2 serial number> -package *
      ```

      The following output is displayed:

      ```
      Warning: The following licenses will be removed:
      <list of each installed package>
      Do you want to continue? {y|n}: y
      ```

      Enter `y` to remove all of the packages.

11. Verify that the licenses are properly installed by using the following command and examining its output:

    `system license show`

    You might want to compare the output with the output that you captured in the Prepare the nodes for upgrade.

12. If NetApp Storage Encryption (NSE) was in use on the configuration and you set the `setenv bootarg.storageencryption.support` command to `true` with the `<kmip.init.maxwait>` variable `off` (in Step 27), you need to reset the variable by using the following command:

    `set diag; systemshell -node <nodename> -command sudo kenv -u -p kmip.init.maxwait`

13. Configure the SPs by using the following command on both nodes:

    `system service-processor network modify -node <node_name>`

    See the System Administration Reference for information about the SPs and the ONTAP 9.8 Commands: Manual Page Reference for detailed information about the `system service- processor network modify` command.

14. Take the following actions on one of the new nodes:
    a. Enter advanced privilege level by using the following command:

       `set -privilege advanced`

    b. Enter the following command:

       `storage failover modify -node <node_name> - cifs- ndo-duration default|medium|low`

       - Enter `medium` if the system will have workloads in which 50% to 75% of the operations will be 4 KB or smaller.
       - Enter `low` if the system will have workloads in which 75% to 100% of the operations will be 4 KB or smaller.

    c. Return to the admin level by using the following command:

       `set -privilege admin`

    d. Reboot the system to ensure that the changes take effect.

15. If you want to set up a switchless cluster on the new nodes, follow the instructions in **Transitioning to a two-node switchless cluster** on the NetApp Support Site.

After you finish

If Storage Encryption is enabled on node3 and node4, complete the section Set up Storage Encryption on the new controller module. Otherwise, complete the section Decommission the old system.