Rules governing node root volumes and root aggregates

ONTAP 9

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Rules governing node root volumes and root aggregates overview

A node's root volume contains special directories and files for that node. The root aggregate contains the root volume. A few rules govern a node's root volume and root aggregate.

A node's root volume is a FlexVol volume that is installed at the factory or by setup software. It is reserved for system files, log files, and core files. The directory name is `/mroot`, which is accessible only through the systemshell by technical support. The minimum size for a node's root volume depends on the platform model.

- The following rules govern the node's root volume:
  - Unless technical support instructs you to do so, do not modify the configuration or content of the root volume.
  - Do not store user data in the root volume.

    Storing user data in the root volume increases the storage giveback time between nodes in an HA pair.
  - You can move the root volume to another aggregate.

    Relocate root volumes to new aggregates
- The root aggregate is dedicated to the node's root volume only.

  ONTAP prevents you from creating other volumes in the root aggregate.

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Free up space on a node's root volume

A warning message appears when a node's root volume has become full or almost full. The node cannot operate properly when its root volume is full. You can free up space on a node's root volume by deleting core dump files, packet trace files, and root volume Snapshot copies.

Steps

1. Display the node's core dump files and their names by using the `system node coredump show` command.
2. Delete unwanted core dump files from the node by using the `system node coredump delete` command.
3. Access the nodeshell:

   `system node run -node` *`nodename`*

nodename is the name of the node whose root volume space you want to free up.

4. Switch to the nodeshell advanced privilege level from the nodeshell:

   priv set advanced

5. Display and delete the node's packet trace files through the nodeshell:
   a. Display all files in the node's root volume:

      ls /etc

   b. If any packet trace files (`*.trc`) are in the node's root volume, delete them individually:

      rm /etc/log/packet_traces/*file_name.trc*

6. Identify and delete the node's root volume Snapshot copies through the nodeshell:
   a. Identify the root volume name:

      vol status

      The root volume is indicated by the word "root" in the "Options" column of the `vol status` command output.

      In the following example, the root volume is `vol0`:

      ```
      node1*> vol status

               Volume State           Status            Options
                 vol0 online          raid_dp, flex     root, nvfail=on
                                      64-bit
      ```

   b. Display root volume Snapshot copies:

      snap list root_vol_name

   c. Delete unwanted root volume Snapshot copies:

      snap delete root_vol_namesnapshot_name

7. Exit the nodeshell and return to the clustershell:

   exit

Relocate root volumes to new aggregates

The root replacement procedure migrates the current root aggregate to another set of disks without disruption.

About this task

Storage failover must be enabled to relocate root volumes. You can use the `storage failover modify -node nodename -enable true` command to enable failover.

You can change the location of the root volume to a new aggregate in the following scenarios:

- When the root aggregates are not on the disk you prefer
- When you want to rearrange the disks connected to the node
- When you are performing a shelf replacement of the EOS disk shelves

Steps

1. Set the privilege level to advanced:

   `set privilege advanced`

2. Relocate the root aggregate:

   `system node migrate-root -node nodename -disklist disklist -raid-type raid-type`

   - **-node**

     Specifies the node that owns the root aggregate that you want to migrate.

   - **-disklist**

     Specifies the list of disks on which the new root aggregate will be created. All disks must be spares and owned by the same node. The minimum number of disks required is dependent on the RAID type.

   - **-raid-type**

     Specifies the RAID type of the root aggregate. The default value is `raid-dp`.

3. Monitor the progress of the job:

   `job show -id jobid -instance`

Results

If all of the pre-checks are successful, the command starts a root volume replacement job and exits. Expect the node to restart.

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