How quotas are activated

ONTAP 9

NetApp
September 07, 2022

This PDF was generated from https://docs.netapp.com/us-en/ontap/volumes/quotas-activated-concept.html on September 07, 2022. Always check docs.netapp.com for the latest.

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How quotas are activated

How quotas are activated overview

New quotas and changes to quotas do not take effect until they are activated. Knowing how quota activation works can help you manage your quotas less disruptively.

You can activate quotas at the volume level.

Your quotas file does not need to be free of all errors to activate quotas. Invalid entries are reported and skipped. If the quotas file contains any valid entries, the quotas are activated.

Quotas are activated either by *initializing* (turning them on) or by *resizing*. Turning off quotas and turning them on again is called reinitializing.

The length of the activation process and its impact on quota enforcement depends on the type of activation:

- The initialization process involves two parts: a `quota on` job and a quota scan of the volume's entire file system. The scan begins after the `quota on` job completes successfully. The quota scan can take some time; the more files that the volume has, the longer it takes. Until the scan is finished, quota activation is not complete and quotas are not enforced.
- The resize process involves only a `quota resize` job. Because it does not involve a quota scan, resizing takes less time than a quota initialization. During a resize process, quotas are enforced.

By default, the `quota on` and `quota resize` jobs run in the background, which permits you to use other commands at the same time.

Errors and warnings from the activation process are sent to the event management system. If you use the `-foreground` parameter with the `volume quota on` or `volume quota resize` commands, the command does not return until the job is complete; this is useful if you are reinitializing from a script. To display errors and warnings later, you can use the `volume quota show` command with the `-instance` parameter.

Quota activation persists across halts and reboots. The process of quota activation does not affect the availability of the storage system data.

When you can use resizing

Because quota resizing is faster than quota initialization, you should use resizing whenever possible. However, resizing only works for certain types of quota changes.

You can resize quotas when making the following types of changes to the quota rules:

- Changing an existing quota.

  For example, changing the limits of an existing quota.

- Adding a quota for a quota target for which a default quota or a default tracking quota exists.
- Deleting a quota for which a default quota or default tracking quota entry is specified.
- Combining separate user quotas into one multi-user quota.

After you have made extensive quotas changes, you should perform a full reinitialization to ensure that all of the changes take effect.

If you attempt to resize and not all of your quota changes can be incorporated by using a resize operation, ONTAP issues a warning. You can determine from the quota report whether your storage system is tracking disk usage for a particular user, group, or qtree. If you see a quota in the quota report, it means that the storage system is tracking the disk space and the number of files owned by the quota target.

Example quotas changes that can be made effective by resizing

Some quota rule changes can be made effective by resizing. Consider the following quotas:

```
#Quota Target type             disk  files thold sdisk sfile
#------------ ----             ----  ----- ----- ----- -----
*             user@/vol/vol2    50M   15K
*             group@/vol/vol2  750M   85K
*             tree@/vol/vol2     -     -
jdoe          user@/vol/vol2/  100M   75K
kbuck         user@/vol/vol2/  100M   75K
```

Suppose you make the following changes:

- Increase the number of files for the default user target.
- Add a new user quota for a new user, boris, that needs more disk limit than the default user quota.
- Delete the kbuck user's explicit quota entry; the new user now needs only the default quota limits.

These changes result in the following quotas:

```
#Quota Target type             disk  files thold sdisk sfile
#------------ ----             ----  ----- ----- ----- -----
*             user@/vol/vol2    50M   25K
*             group@/vol/vol2  750M   85K
*             tree@/vol/vol2     -     -
jdoe          user@/vol/vol2/  100M   75K
boris         user@/vol/vol2/  100M   75K
```

Resizing activates all of these changes; a full quota reinitialization is not necessary.

When a full quota reinitialization is required

Although resizing quotas is faster, you must do a full quota reinitialization if you make certain small or extensive changes to your quotas.

A full quota reinitialization is necessary in the following circumstances:

- You create a quota for a target that has not previously had a quota.
- You change user mapping in the `usermap.cfg` file and you use the QUOTA_PERFORM_USER_MAPPING entry in the quotas file.
- You change the security style of a qtree from UNIX to either mixed or NTFS.
- You change the security style of a qtree from mixed or NTFS to UNIX.
- You remove users from a quota target with multiple users, or add users to a target that already has multiple users.
- You make extensive changes to your quotas.

Example of quotas changes that require initialization

Suppose you have a volume that contains three qtrees and the only quotas in the volume are three tree quotas. You decide to make the following changes:

- Add a new qtree and create a new tree quota for it.
- Add a default user quota for the volume.

Both of these changes require a full quota initialization. Resizing does not make the quotas effective.

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