Groupdrive - Permissions - Special case NFS

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Schlüsselwörter

Permissions

Lösung (öffentlich)

Group Drive - Permissions - Special case NFS

There are different access options for Group Drives with NFS shares, with different consequences. We distinguish between direct access (NFS mount) and access via the Datagateway.

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Direct Access (Native NFS): The Group Drive is mounted directly into the local file system on your own workstation computer or server. Here, no user authentication takes place, but rather a check of the IP address.

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[1]Datagateway: Access occurs via a central server that provides the drive and offers protocols such as SCP or SFTP. Here, real user authentication takes place.

Permissions with Direct Access

With direct mounting, no verification of the user takes place, but only a check of the IP address of the computer via the shares configured in the [2]Self-Service Portal.

Because your local computer cannot tell the storage system who you “really” are (in the domain context), standard user permissions technically usually don’t work here. Also, the configured permissions won’t be displayed correctly because your local computer cannot translate the used UIDs and GIDs.

There are practically only two relevant permission levels:

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Everyone: By default, “Everyone” has no access. We strongly advise against changing this (security risk).

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root (Administrator): The root user always has full access.

Share with Root Access Required
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To be able to write to the drive, you must use the root user.

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You must have local root privileges on your client.

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In the Self-Service Portal, root access must be explicitly allowed for the share (no_root_squash).

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An NFS share without explicitly activated root access is effectively non-functional for direct access.

User Access via bindfs

By default, only the local root user can access such an NFS mount point. One way to make the mounted filesystem accessible to local users is to use [3]bindfs.

bindfs creates an additional local filesystem on top of the existing mount and remaps file permissions locally. This allows files to be accessed by local users regardless of the permissions visible on the NFS server. The actual permissions on the NFS server remain unchanged.

Example:

$ sudo mount -t nfs cephnfs.zih.tu-dresden.de:/glw/kurtcephte mnt -o vers=3

$ sudo bindfs -o perms=0777 mnt mnt_public

$ ls mnt

ls: mnt: Permission denied (os error 13).

$ ls mnt_public

barbaz* 'New folder'

New files via bindfs

When new files are created, the UID of the local user is stored as the file owner. Since this UID is often not mapped to the same user (or to any user at all) on other systems, the ownership information is usually of little practical use. The group is inherited automatically through the directory’s setgid bit.

We therefore recommend changing the owner after creating a new file or directory, either to root or to the UID intended for the directory.

Since the owner of newly created files is generally not meaningful in this setup and access is controlled through group permissions, we recommend using a umask of 0707. This ensures that only the group receives read and write permissions, while no permissions are granted to the owner.

If you changed or plan on changing the owner, a umask 0007 is also fine.

Permissions when Accessing via the Datagateway

The Datagateway behaves like a classic login server. Here, the access rights on the file system of the Group Drive are completely enforced.

Because you log in with your TUD account, typical permissions apply here:

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There is no root access.

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You access as your TUD user.

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You receive exactly the access rights that are assigned to your group (admin or user group).

[1] https://faq.tickets.tu-dresden.de/otrs/public.pl?Action=PublicFAQZoom;ItemID=1525;
[2] https://selfservice.tu-dresden.de/services/groupdrive/overview/
[3] https://bindfs.org/