# Manually Install QRescue to recover Qlocker-encrypted files on QNAP NAS



## Overview:

QRescue is the data recovery tool for Qlocker-encrypted 7z files. It contains:

- PhotoRec (Open Source Project / GNU General Public License / Project Link):
  File recovery software designed to recover lost files from hard disks and CD-ROMs, and lost pictures (thus the Photo Recovery name) from storage medium.

- QRescue (Powered by QNAP):
  The script to recover file structures from the encrypted 7z files and PhotoRec files.

## Requirements:

- Download the QRescue app from this link.
  https://download.qnap.com/QPKG/QRescue.zip

- Prepare an external hard disk drive with a capacity larger than the total used storage space on your NAS.
    - Note: It's advised to prepare an external HDD with 1.5 to 2x free space than the total used storage space on your NAS. Additional space might be required during the recovery process. If the available space is less than the suggested value, error and other issues

may occur.

## Demo Video:

- Please refer to this link.

## Steps:

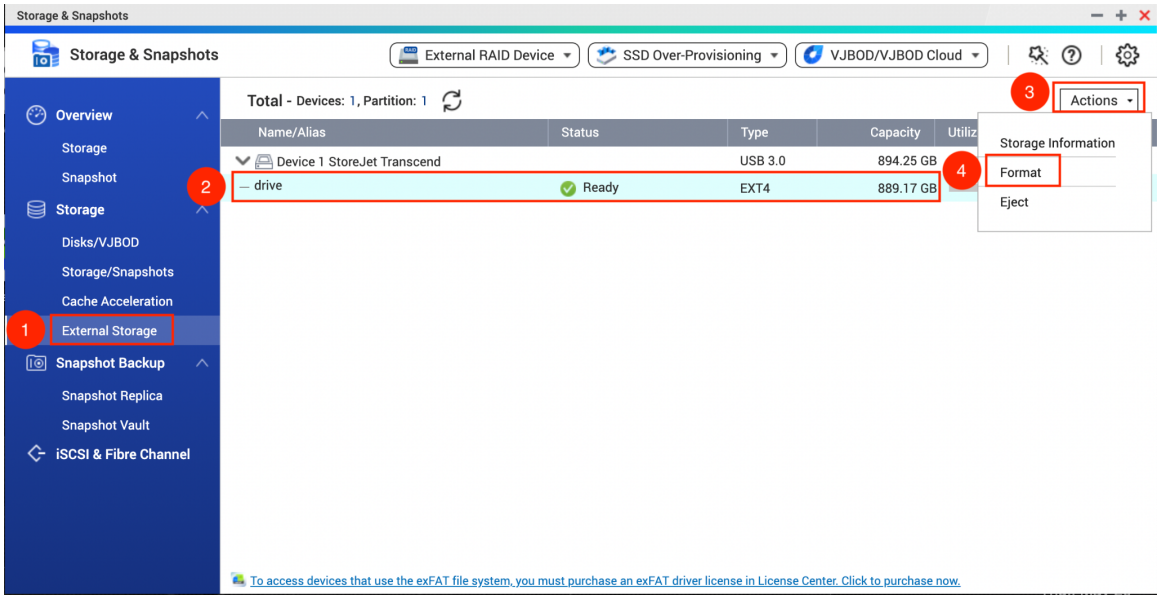
### Part 1. Configure external HDD with the name "rescue" and create folders with the name "recup1" for recovery.

QRescue will process the recovery process to external drive first, and we need to do some configuration for this recovery process and create the specific destination and folder name.

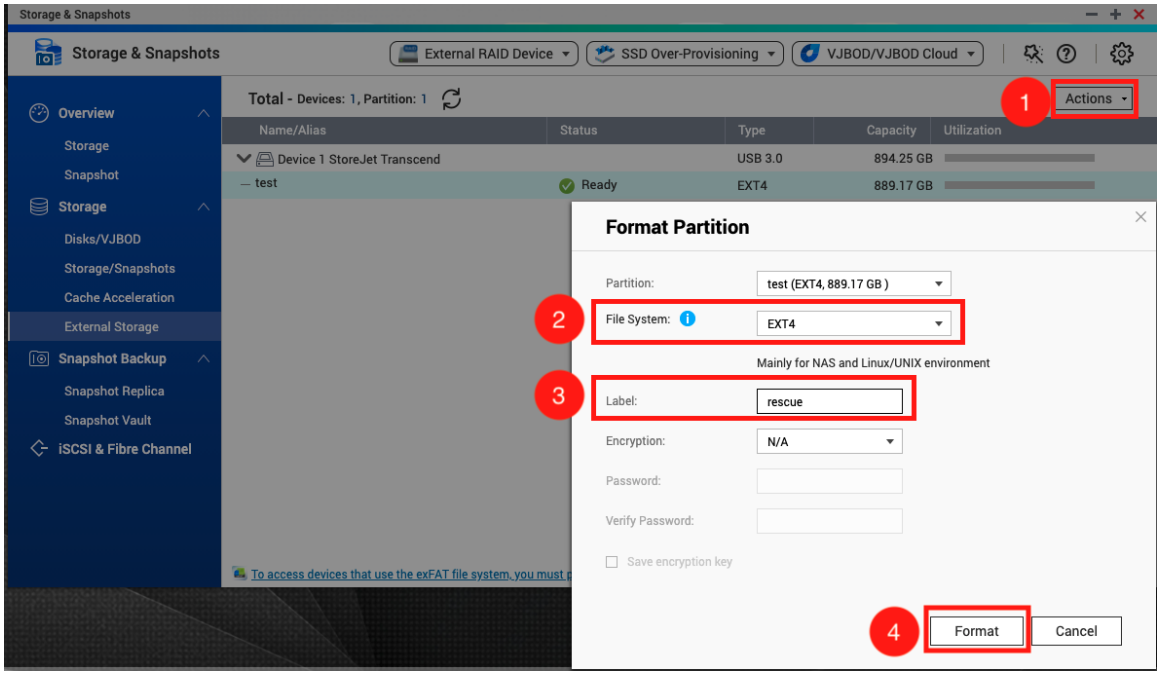
1. You need to prepare an external HDD that its usable capacity is larger than the total used storage size of your NAS. This is because you will recover the files to the external device first. Please check your used volume size first by clicking **More** > **About** on the QTS desktop.



2. Insert the external drive to your NAS. Please go to **Storage Manager** > **External Device** > Select your external device > Click “**Actions**” > Click “**Format**” to format the external drive.




3. The File System must be “EXT4”, and the Label name must be key in “rescue”. If these configuration is ready, please click “**Format**”

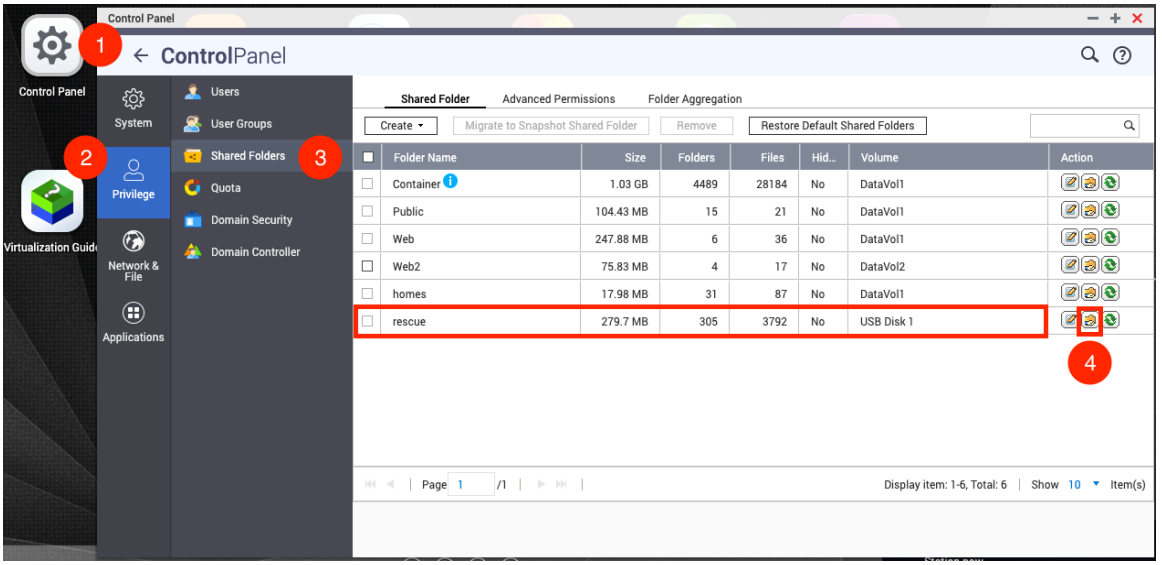


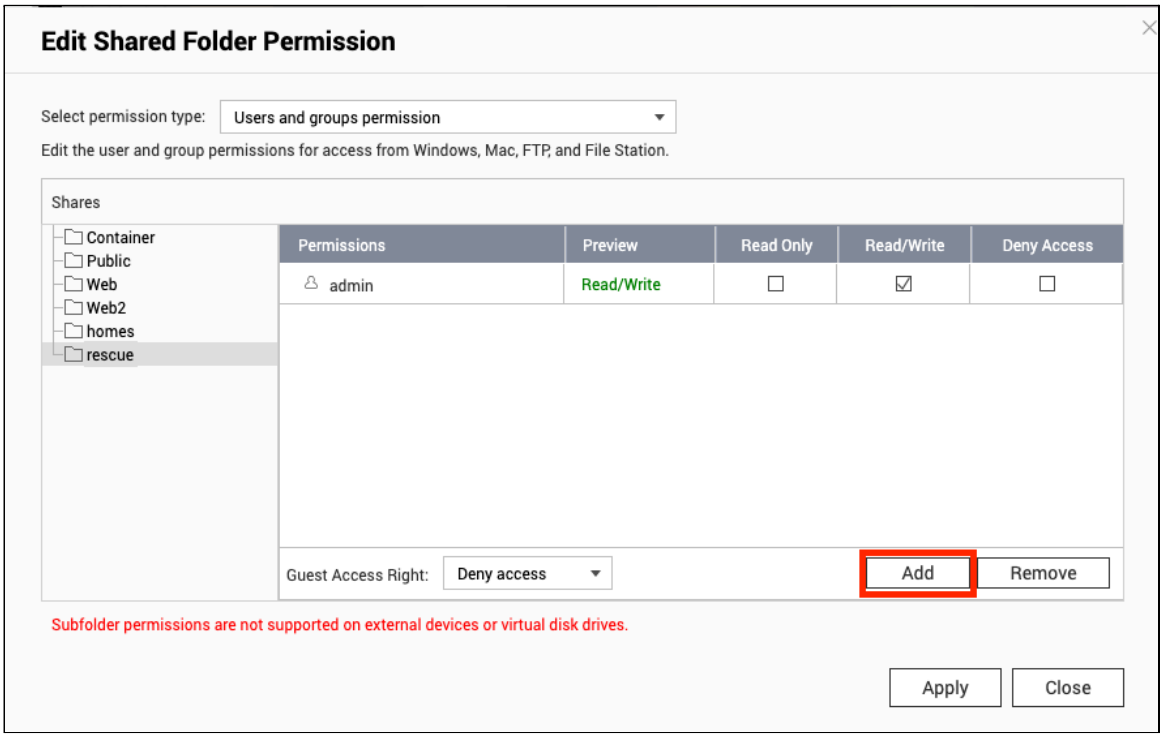

Notice:

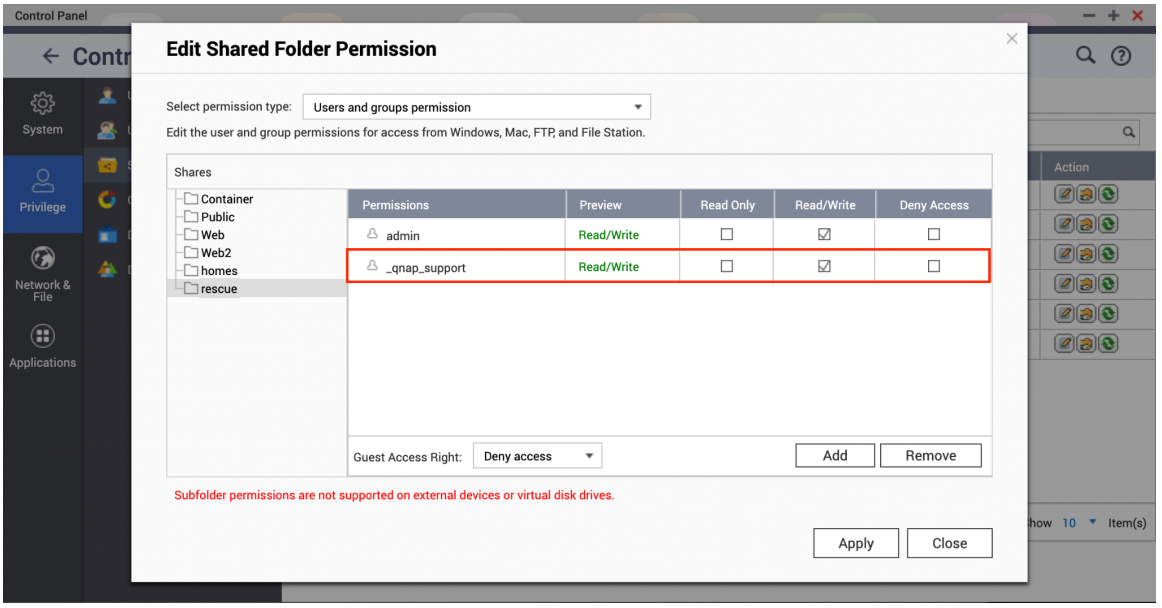
The QRescue app will use “rescue” as the external drive name. If you use other names, the recovery process might fail.

4. (Optional) If you disable the admin account or you don't use admin to login QTS, you might not see the external drive on the File Station. Please go to **Control Panel** > **Privilege** > **Shared Folder** > **Edit Shared Folder Permission** to enable or change read / write permission for “rescue” folder and to match the account that you log in the NAS.

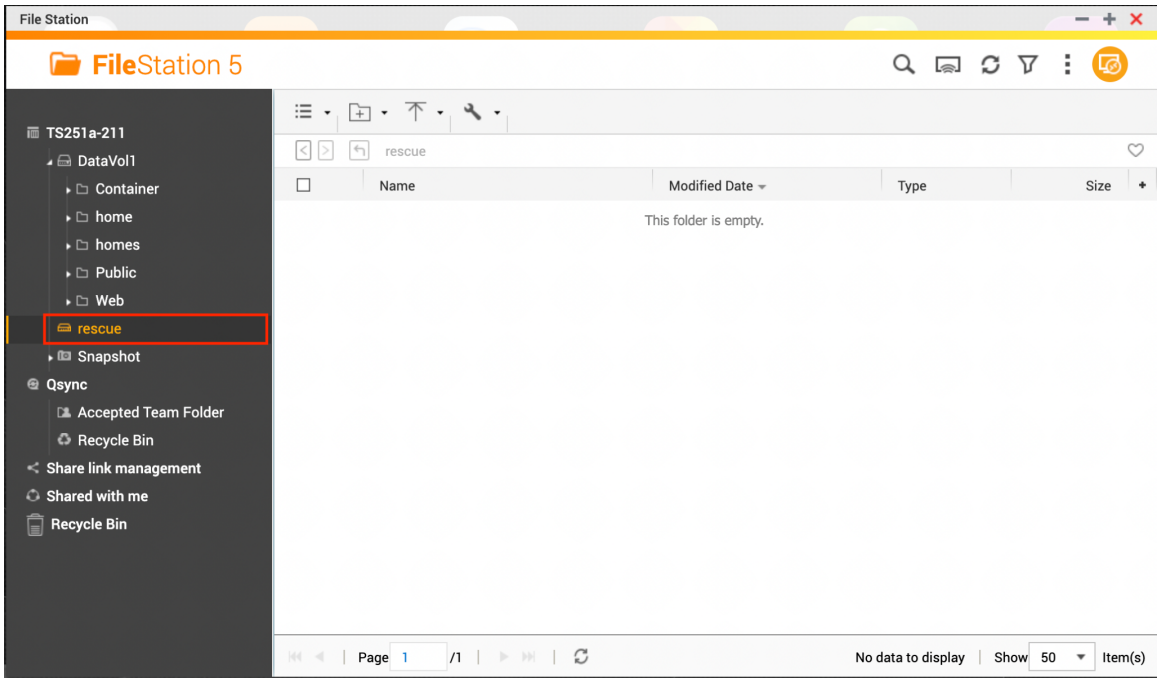
    - Sample:
      Grant other administrator group account (Example: “_qnap_support” is the administrator group account for read/write permission to external hard drive naming “rescue”).



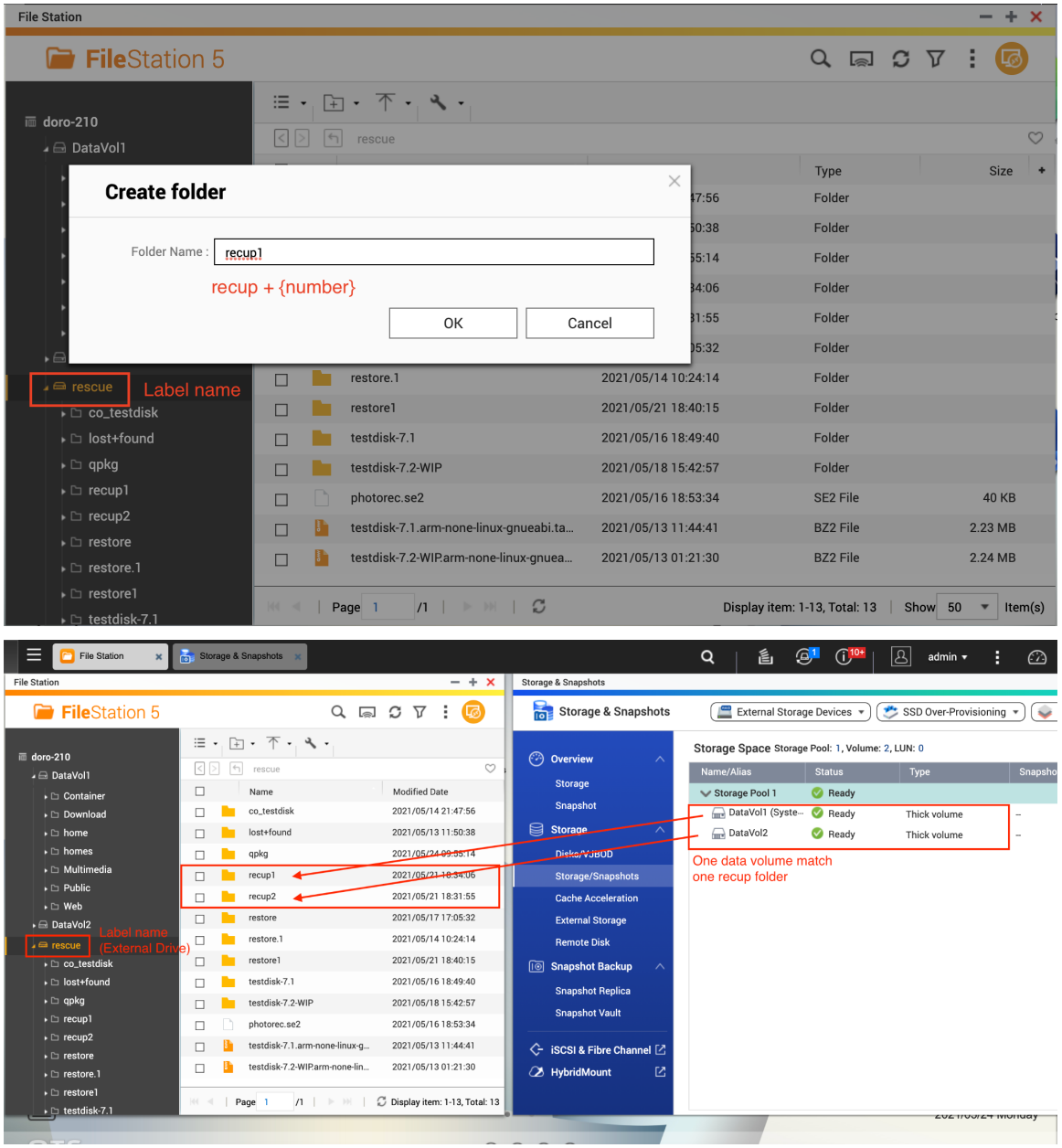






5. Using **File Station** to check the volume for the correct external device name.




6. Create the new folder and name as “recup1” (format: recup+{number}). If you have more than one storage volume, you need to add more folders for recovery.



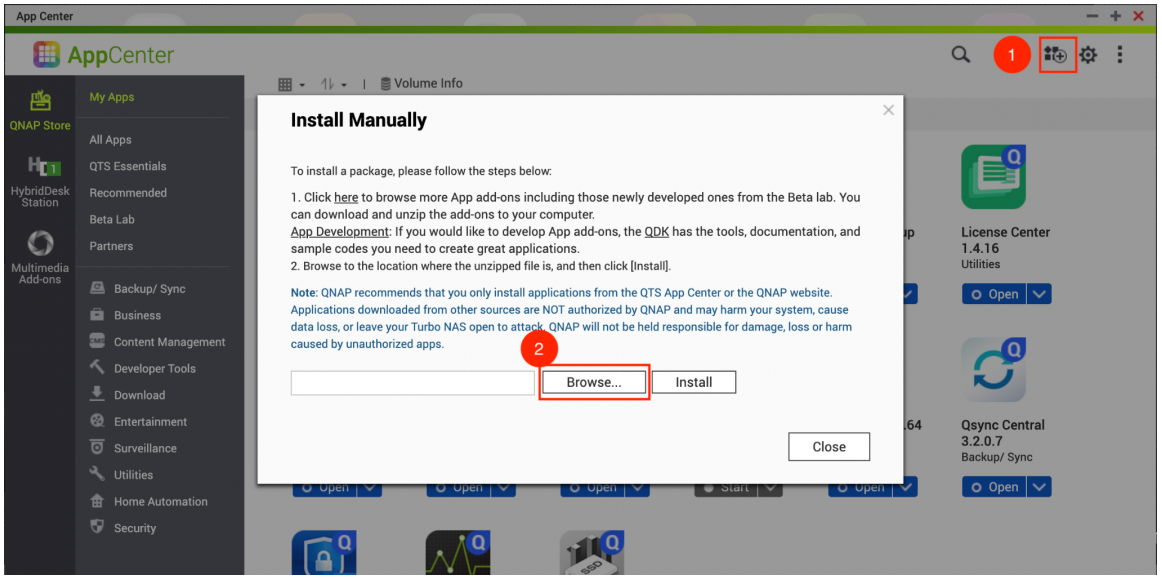

Notice:
The QRescue app will use “recup+{number}” as the folder name. If you use other names, the recovery process might fail.

## Part 2. Download and Manually Install the QRescue App

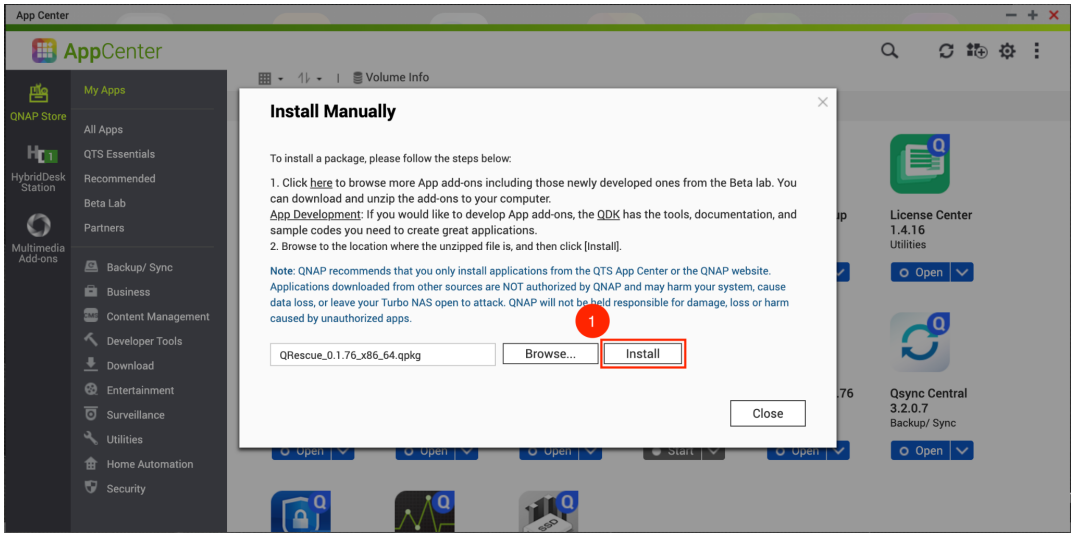
This QRescue app is a special build. Therefore, you need to manually install this app from the QTS App Center.

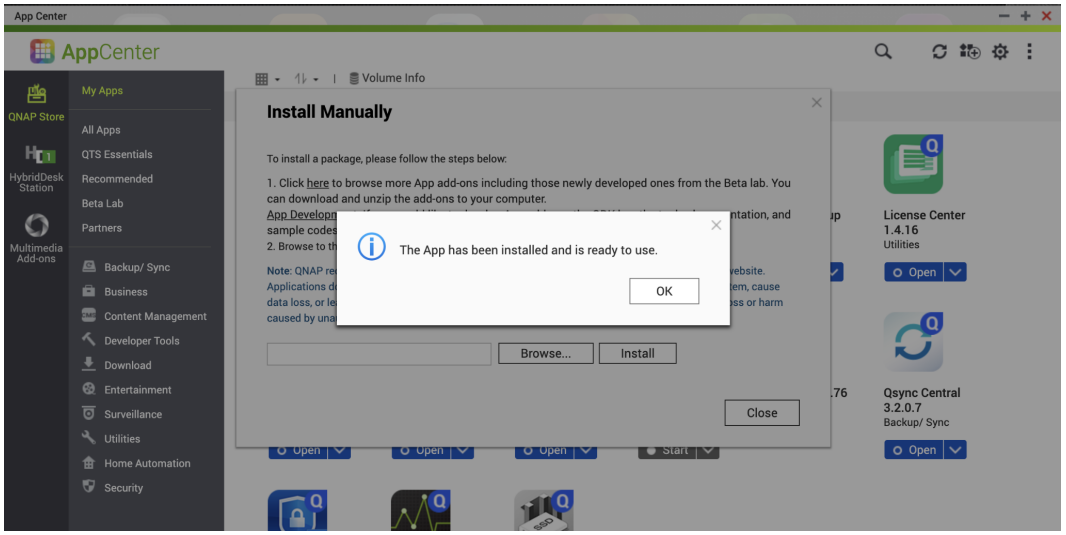
7. Please go to this link to download the QRescue app.
   https://download.qnap.com/QPKG/QRescue.zip

8. Please go to **App Center** > Click **Install Manually** > Click **Browse** to find the QRescue app location on your computer.

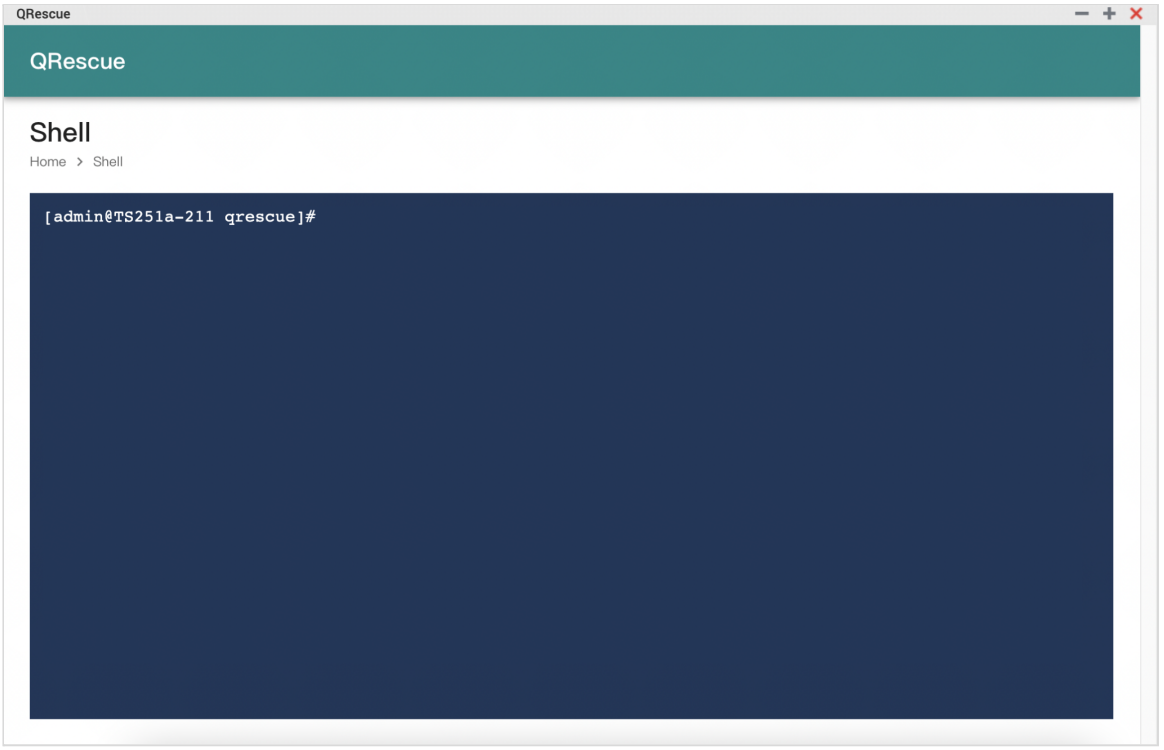



9. After selecting the app location, you can click **Install.** Wait until the installation completes and open the **QRescue** app on QTS desktop or side-bar.




10. When you open the QRescue app, you will see the web console. It can help to run PhotoRec and QRescue to recover your files.



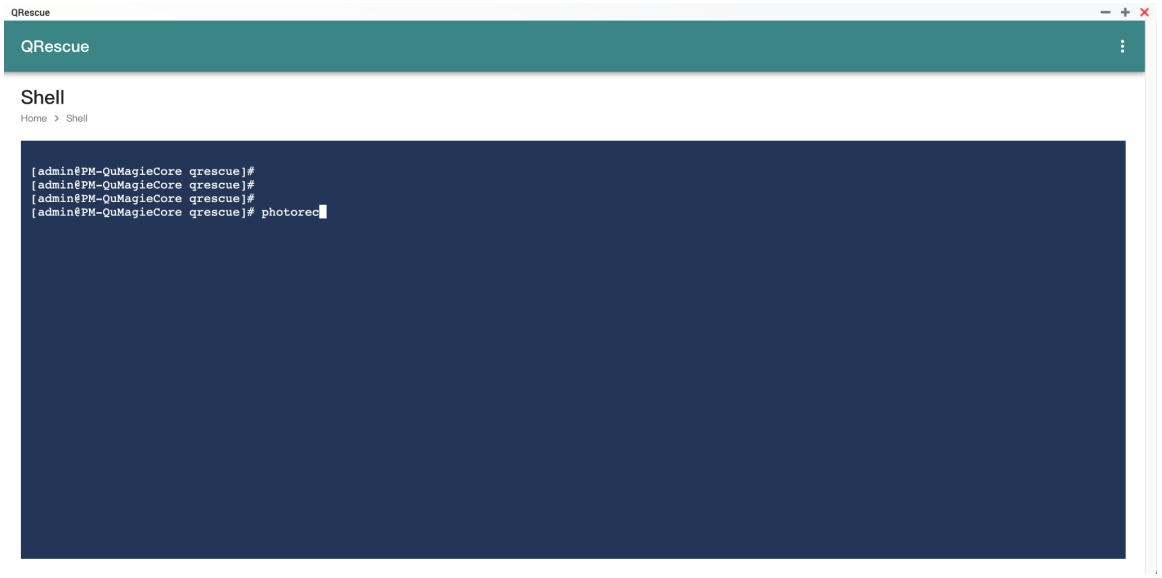

## Part 3. Run PhotoRec

Running PhotoRec can help you to recover the lost files from hard disks to the external drive. Now you will recover the NAS files to the “recup1” (example: recup+{disk_number}) folder on the external drive.

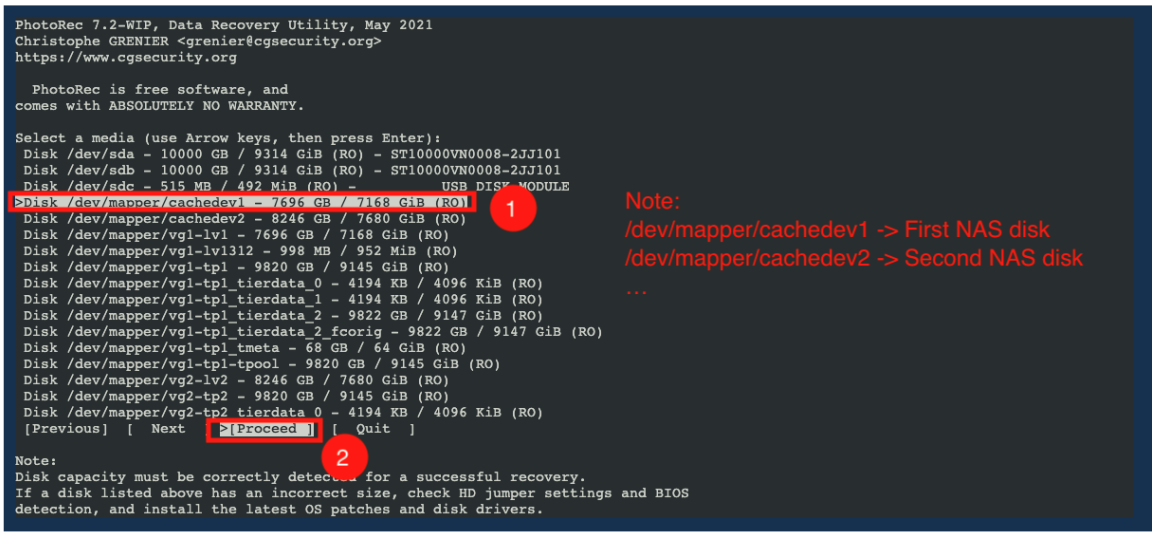
11. Type this command and press Enter on your keyboard. You will start to run **PhotoRec.**

    **Command**:

    ```
    photorec
    ```




12. Use Up/Down arrows to choose the hard drive. Then, you can use Left/Right arrows and start to select the NAS disk for running recovery by **PhotoRec**.

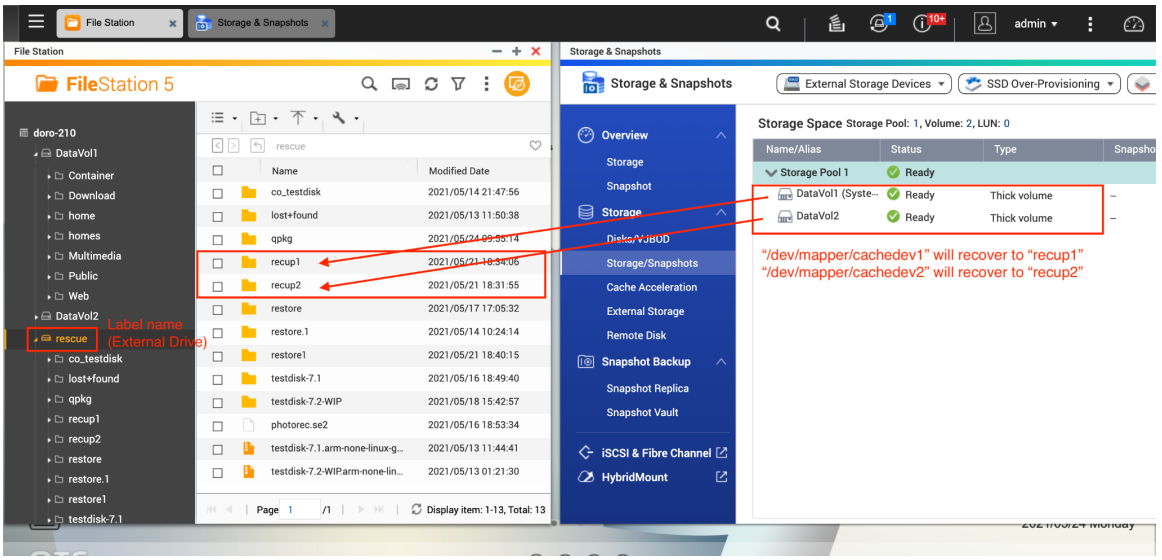



- Sample:
  - /dev/mapper/cachedev1 as 1st data volume
  - /dev/mapper/cachedev2 as 2nd data volume

    ...
  - /dev/mapper/cachedev20 as 20th data volume

- Note:

You can check the number of data volumes in **Storage & Snapshots** > **Storage/Snapshots**




13. Select the "ext4" partition and press **"Enter"**

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

Disk /dev/mapper/cachedev1 - 161 GB / 150 GiB (RO)

     Partition                  Start        End    Size in sectors
      Unknown                 0   0  1 314572799   0  1  314572800 [Whole disk]
>    P ext4                  0   0  1 314572799   0  1  314572800 [DataVol1]
```

14. Select the file system as **[ ext2/ext3 ]** and click **"Enter"** key.

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

   P ext4                    0   0  1 314572799   0  1  314572800 [DataVol1]

To recover lost files, PhotoRec needs to know the filesystem type where the
file were stored:
>[ ext2/ext3 ] ext2/ext3/ext4 filesystem
 [ Other     ] FAT/NTFS/HFS+/ReiserFS/...
```

15. Select the space as **[ Whole ]** and click the **"Enter"** key.

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

   P ext4                    0   0  1 314572799   0  1  314572800 [DataVol1]


Please choose if all space needs to be analysed:
 [   Free    ] Scan for file from ext2/ext3 unallocated space only
>[   Whole   ] Extract files from whole partition
```

16. Now we need to select the external device's folder as the recovery destination.
    - **Source Destination:** /share/external/DEV3301_01/qpkg/QRescue [QRescue qpkg]

- **Recovery Destination:** /share/rescue/recup1 [External Device]
- Click ".." to go back to the upper level folder

  - Sample destination: External disk on QRescue app

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021

Please select a destination to save the recovered files to.
Do not choose to write the files to the same partition they were stored on.
Keys: Arrow keys to select another directory
      C when the destination is correct
      Q to quit
Directory /share/external/DEV3301_1/qpkg/QRescue/workspace
 drwxr-xr-x     0     0      4096 22-May-2021 10:35 .
>drwxr-xr-x     0     0      4096 21-May-2021 18:43 ..
 lrwxrwxrwx     0     0        32 21-May-2021 18:21 l
 lrwxrwxrwx     0     0        39 21-May-2021 18:21 photorec
 -rw-r-----     0     0     40960 22-May-2021 10:35 photorec.se2
 lrwxrwxrwx     0     0        42 21-May-2021 18:21 qrescue.pyc
 lrwxrwxrwx     0     0        41 21-May-2021 18:21 qrescue.sh
 lrwxrwxrwx     0     0        44 21-May-2021 18:21 sample_mem.sh
```

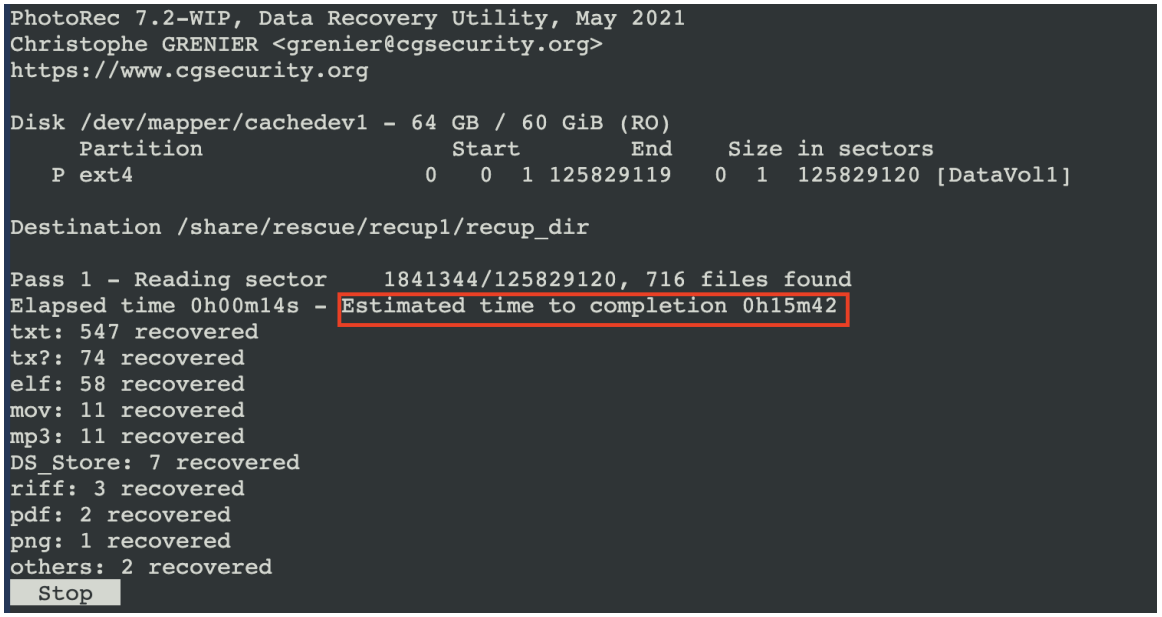
  - Sample: External Device (name: rescue) > Destination Folder (name: recup1)

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021

Please select a destination to save the recovered files to.
Do not choose to write the files to the same partition they were stored on.
Keys: Arrow keys to select another directory
      C when the destination is correct
      Q to quit
Directory /share/rescue
 drwxrwxrwx     0     0      4096 24-May-2021 09:55 .
 drwxrwxr-x     0     0       580 21-May-2021 01:36 ..
 drwxrwxrwx     0     0      4096 14-May-2021 21:47 co_testdisk
 drwx------     0     0     16384 13-May-2021 11:50 lost+found
 drwxr-xr-x     0     0      4096 24-May-2021 09:55 qpkg
>drwxrwxrwx     0     0      4096 21-May-2021 18:34 recup1
 drwxrwxrwx     0     0      4096 21-May-2021 18:31 recup2
 drwxr-xr-x     0     0      4096 17-May-2021 17:05 restore
```

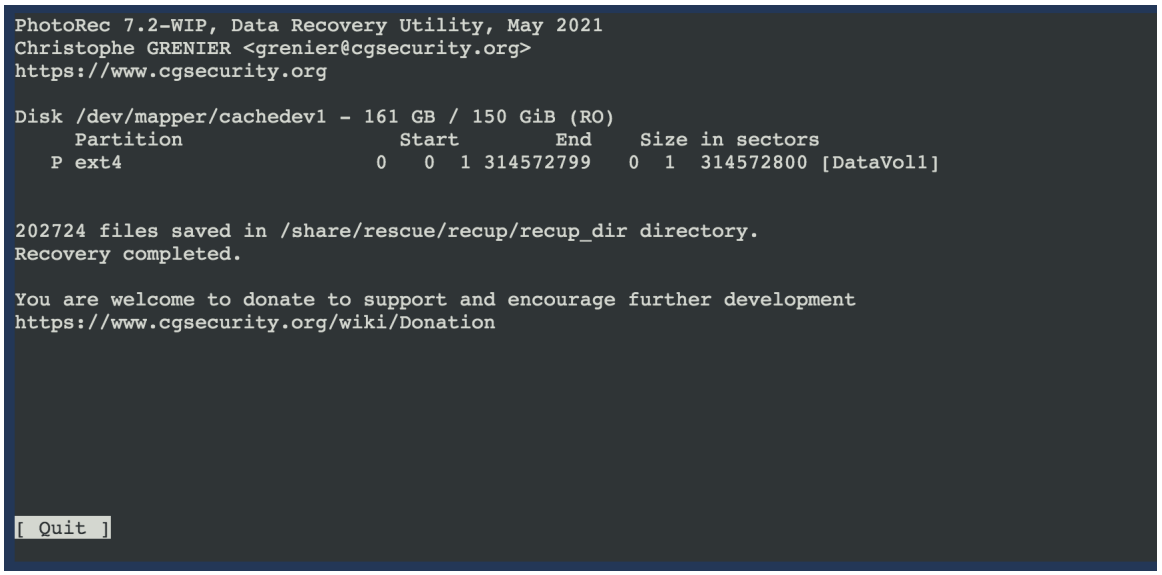
17. Please click "**C**" on the keyboard when the destination is "/share/rescue/recup1".

```
PhotoRec 7.2-WIP, Data Recovery Utility, May 2021

Please select a destination to save the recovered files to.
Do not choose to write the files to the same partition they were stored on.
Keys: Arrow keys to select another directory
      C when the destination is correct
      Q to quit
Directory /share/rescue/recup1
>drwxrwxrwx     0     0      4096 21-May-2021 18:34 .
 drwxrwxrwx     0     0      4096 24-May-2021 09:55 ..
```

18. Start to run the recovery process by PhotoRec. Now you can see the estimated time to completion.




19. When you finish the PhotoRec, you can press enter when you select **[Quit]** or type in "**ctrl-c**" to exit.



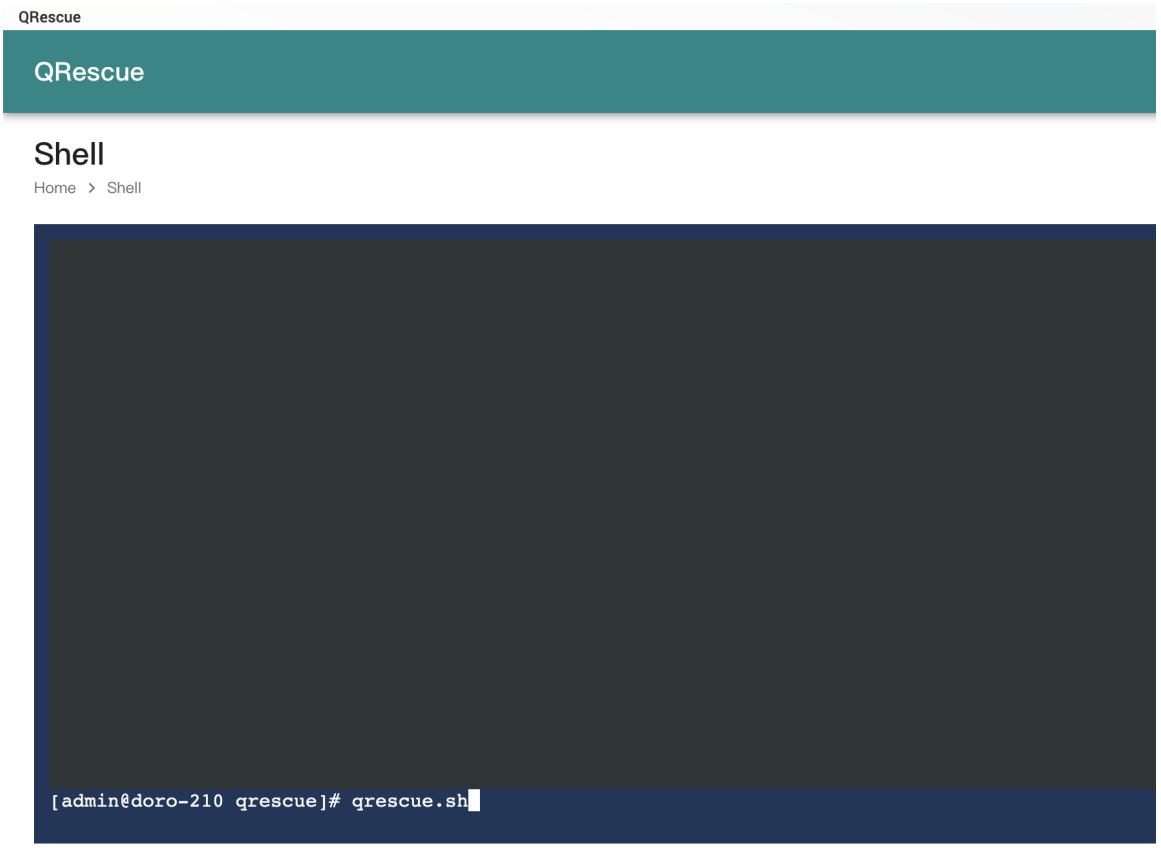

## Part 4. Run QRescue

Run QRescue can help you to recover the files retrieved by PhotoRec. Now you will recover the files from the "recup+{number}" folder to the "restore+{number}" folder which auto creates on your external drive.

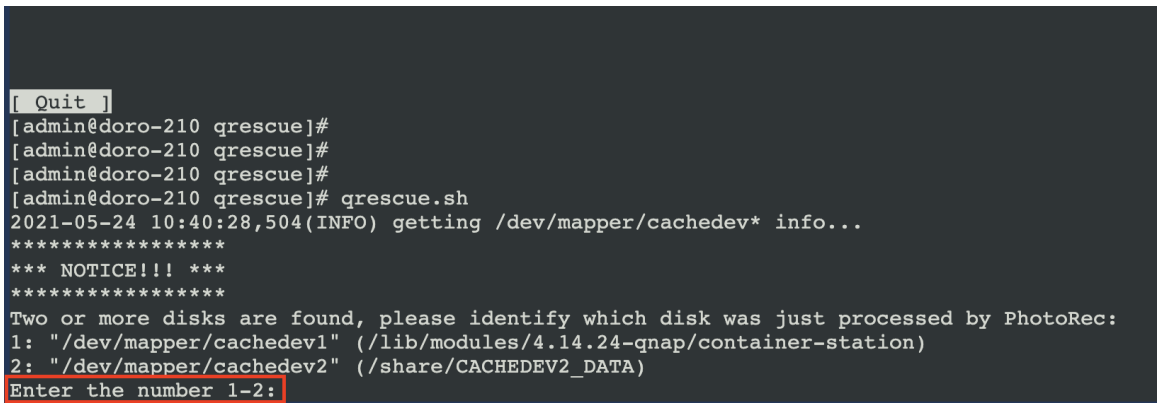
20. Type this command and click Enter on your keyboard. You will start to run **QRescue**.

**Command:**

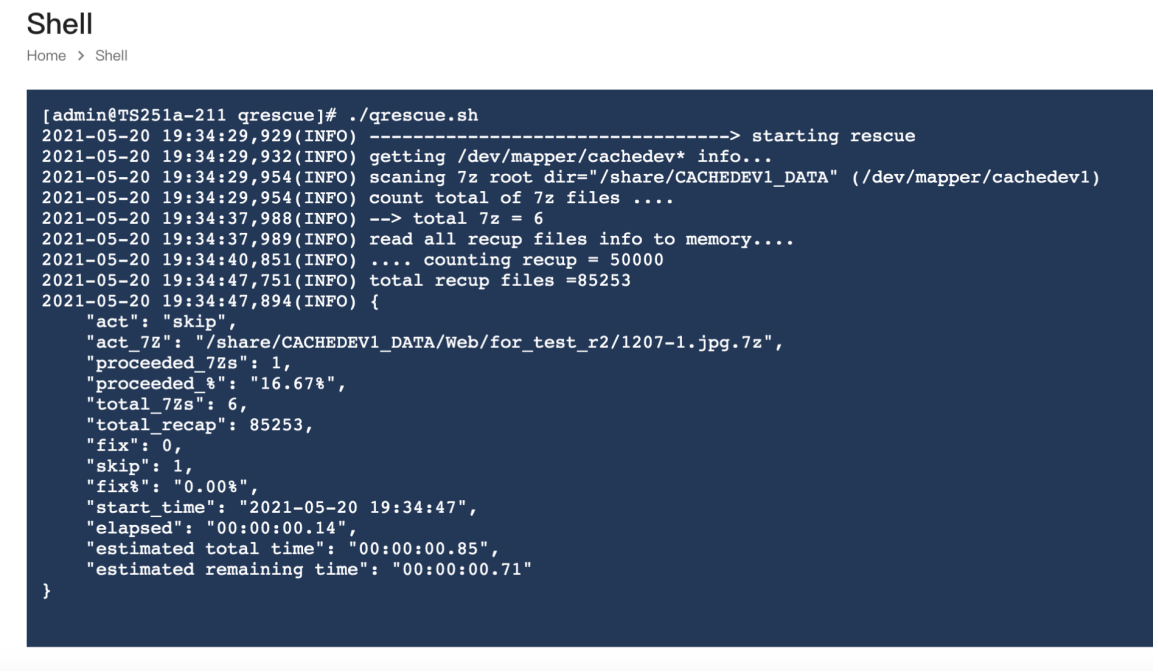
```
qrescue.sh
```



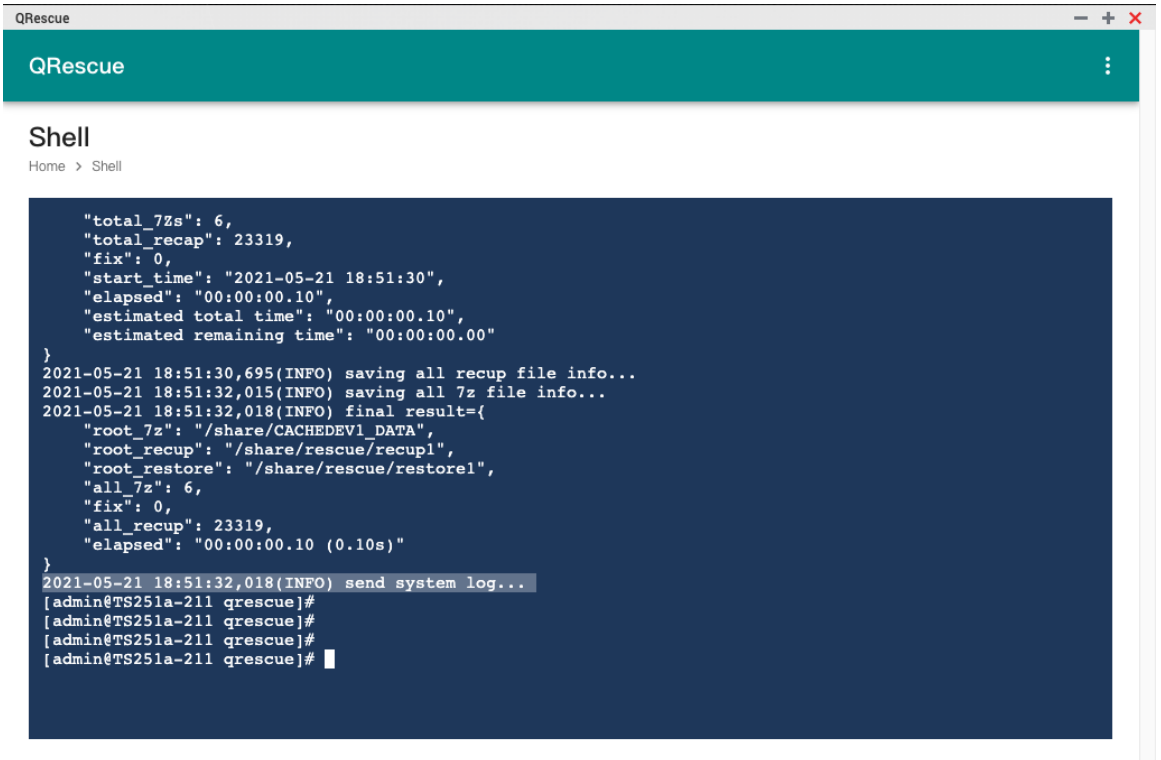

21. (Optional) If you have two or more data volumes on your NAS, the screen will let you select which data volume you will start the process. Please type the number and press “enter”. If you only have one data volume, you might not see this step.




22. (Optional) Now you can see the progress for which files were completed in the recovery process.




23. When all of the QRescue process is completed, the screen will show the result summary and the process for sending the system log.




24. QRescue app also will send the event log to **QuLog Center** / **System Log** and notify you on finishing the whole recovery process. If you have opened the QNAP support ticket, don't forget to make the feedback for your case. QNAP support team will help you to double check. Thank you very much.

## Part 5. Move the recovery data to your NAS.

You can move the recovery data to your NAS by File Station