

Recovering files from snapshots

CISL creates **snapshots** of the [GLADE home file space](#) several times each day in addition to multiple **backups** each week. These snapshots are records of the state of the file system at various times.

Snapshots enable you to retrieve copies of deleted files yourself, quickly and easily, or recover earlier versions of files that have been revised. (To recover files or directories from backups rather than snapshots, contact the [NCAR Research Computing help desk](#).)

The number of snapshots that are available at any one time varies, and the intervals between snapshots may change at any time without prior notice.

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Retrieving directories and files

If you need to retrieve directories or files, first determine if they are available in one or more snapshots by running **snapls** as shown below, then copy the files to your home space. The files will retain the permissions that existed when the snapshot was created.

Find a directory

To see if your current directory is present in any snapshots, just run **snapls** on your command line. You can also specify a directory by executing **snapls -ldhtr directory_name**.

In this example, your current directory is /glade/u/home/username. The output from snapls identifies recent snapshots with date and time stamps in this format: YYYYMMDD-hhmmss.

```
snapls
drwxr-xr-x 41 username ncar 16384 Jul  8 11:51 /glade/u/home/.snapshots/20200208-120001/username
drwxr-xr-x 41 username ncar 16384 Jul  7 10:49 /glade/u/home/.snapshots/20200207-110001/username
drwxr-xr-x 40 username ncar 16384 Jul  7 09:59 /glade/u/home/.snapshots/20200207-100001/username
drwxr-xr-x 40 username ncar 16384 Jul  7 13:25 /glade/u/home/.snapshots/20200207-180001/username
```

Change to /username in the most recent snapshot directory that is identified.

```
cd /glade/u/home/.snapshots/20200208-120001/username
```

Copy the files that you need back to your home directory or a subdirectory.

```
cp file1 file2 file3 /glade/u/home/username
```

Find and copy a file

You can find an individual file by identifying it as in this example. The output shows that **filename** is available in two snapshots.

```
snapls -ldhtr filename
drwxr-xr-x 40 username ncar 16384 Jul  7 09:59 /glade/u/home/.snapshots/20200207-100001/username
drwxr-xr-x 40 username ncar 16384 Jul  7 13:25 /glade/u/home/.snapshots/20200207-180001/username
```

When you identify the file you want, you can copy it back to your current directory as shown here.

```
cp /glade/u/home/.snapshots/20200207-100001/username/filename .
```

Comparing snapshots

You can use the **diff** command to identify changes that were made between snapshots, as in this example.

```
diff /glade/u/home/.snapshots/20200208-100001/username/filename /glade/u/home/.snapshots/20200207-180001/username/filename
```

This can be useful if you need to roll back to an earlier version of a file, but it is not a substitute for following version control best practices.

The diff command is best used for comparing single files or small directory trees within snapshots.