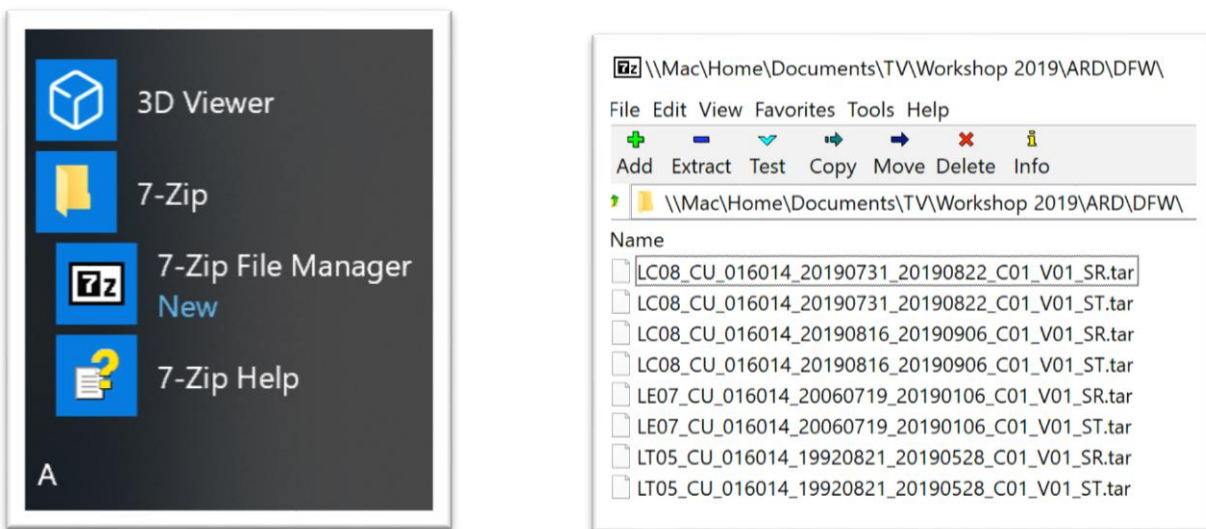


How to unpack tar and gz files from USGS EROS

The USGS EROS Data Center distributes Landsat, ESA Sentinel 2, and ISRO Resource Sat data in one of several zipped formats:

- Landsat Analysis Ready Data (ARD) and Collection 1 Level 3 in the tar format
- Landsat full swath Collection 1 Level 1 data in the tar.gz format
- Sentinel 2 and ISRO ResourceSat data in the zip format

Modern Windows desktops and workstations can open .zip files in the File Explorer, but you will need specialized software to open the tar and tar.gz archives. A readily available and easy to use freeware is 7-Zip. A 7-Zip executable is included in the Software subfolder on the TNRIS thumb drive distributed during the in-person workshop. You can also download the software from the [7 ZIP](#) web site. TCEQ's classroom workstations have 7-Zip installed.



There are at least two options for unpacking compressed archives using 7-Zip:

1. Use the 7-Zip File Manager:
 - a. Open the 7-Zip File Manager and open the folder that holds your tar files.
 - b. Select one or multiple files, compressing the Shift key for a consecutive block or the Ctrl key for nonconsecutive files and click on the Extract icon (blue minus sign).
 - c. In the now-open **Extract** window,
 - i. set the target path. 7-Zip defaults to the current directory.
 - ii. Optionally, check the box below the target path entry to set up a sub folder name. You can accept the default name or rename it. 7-Zip will create it.
 - iii. Choose **No pathnames** or **Full pathnames** as *Path mode*. There is also an **Absolute pathnames** option.
2. You can also work directly from Windows Explorer:
 - a. Locate the file(s) that you want to uncompress.
 - b. Right-click the file.
 - c. Choose **7-Zip > Extract files...** from the pick list.
 - d. Follow the directions in Option 1c above.

A tar.gz file is both archived and compressed (tar file in gz file), so you will need to uncompress the gz file and then extract from the resulting tar file. For the Landsat Collection 1 tar.gz files, your instructor recommends uncompressing the gz file or files to a target folder with no subfolder using the **No pathnames** *Path mode*. Next, select 2 or more tar files, right-click and choose:

- **Extract files...** to set your desired extraction parameters
- **Extract Here** to extract all files into the current folder
- **Extract to “\”** to have 7-Zip create a separate subfolder for each tar collection of files using the tar file name.

Sentinel 2 SAFE files have notoriously long folder, subfolder and file names. Be sure to store files in paths as close to your Windows drive letter as possible to circumvent the Windows 260 character path limit. Alternatively, you can shorten folder names and/or implement the Windows policy to recognize longer file path names.

A typical Sentinel 2 official full file path name to JPEG 2000 file has 148 characters:

S2A_MSIL1C_20181221T171721_N0207_R112_T14RNU_20181221T203925.SAFE\GRANULE\L1C_T14RNU_A018270_20181221T172020\IMG_DATA\ T14RNU_20181221T203925_B01.jp2. For the purposes of this workshop, source Sentinel 2 data are stored in path having less than 260 characters.