

TUTORIAL:
Batch Downloading of LiDAR DEM Data via the OpenTopography Portal
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INTRODUCTION:

This tutorial is designed to aid OpenTopography Portal users who wish to make bulk downloads of LiDAR DEM tiles via the interface located at:

<http://opentopo.sdsc.edu/gridsphere/gridsphere?cid=bulkd1>

The batch download capability of the OpenTopography Portal is designed for advanced users seeking to download large amounts of data quickly and who have the bandwidth, expertise, and software necessary to manage the gigabytes of data this method delivers. For most users we recommend the Google Map-based tile download interface found in the Portal at: <http://opentopography.org/dems>

METHOD:

The OpenTopography Portal provides batch download capability for datasets where standard Digital Elevation Models are available. Under each dataset is a list of specific "targets" or acquisition areas. Clicking on the target link loads a page that lists referring URLs for all available 1km² DEM tiles for a data set on a single page to facilitate easy batch downloading. It is up to users to choose a method to retrieve these data in bulk. This tutorial provides a basic introduction to free software options to retrieve these data. A Google search for "download manager" will quickly reveal alternative options if the ones below do not work for you.

We recommend and will highlight the following download managers in this tutorial:

- I. DownThemAll! extension for the Firefox browser
(<http://www.downthemall.net/>)
- II. Free Download Manager (<http://www.freedownloadmanager.org/>)

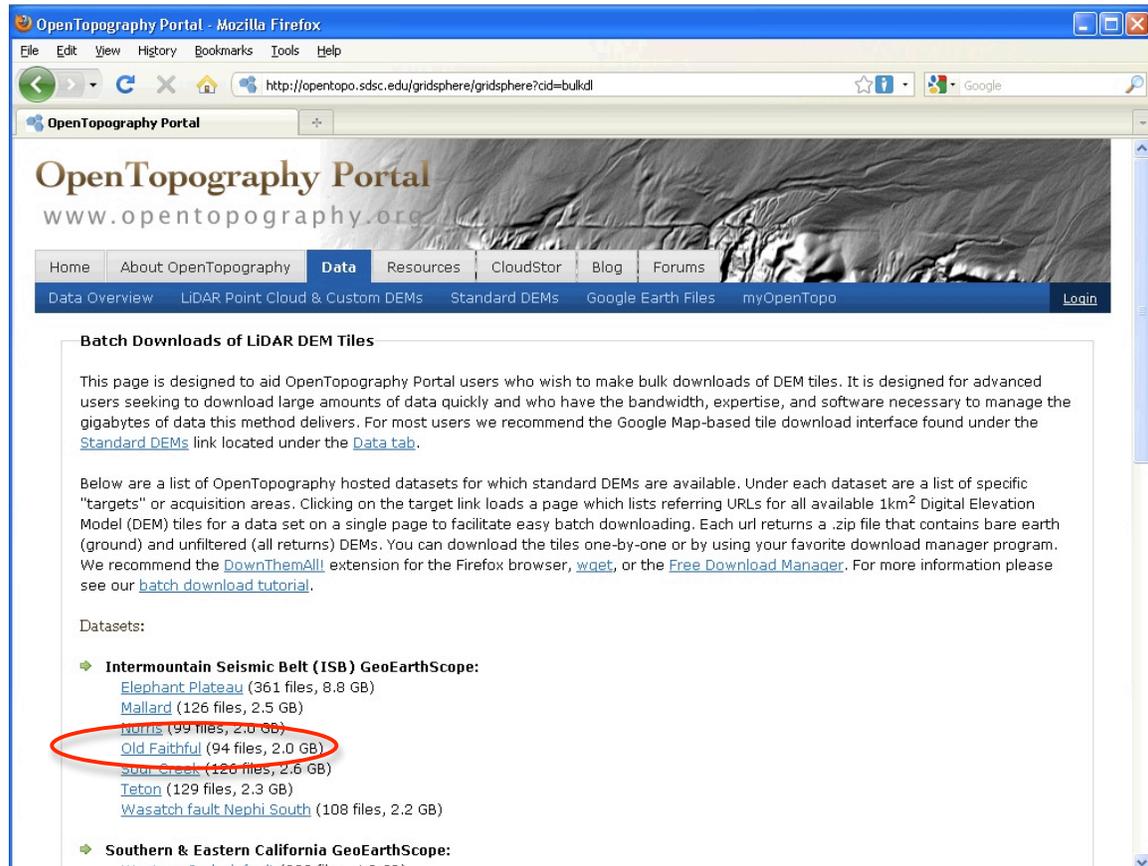
For users who are comfortable with commandline utilities, batch downloading of the tile DEMs can also be easily accomplished via the free GNU Wget program (<http://www.gnu.org/software/wget/>).

Please address questions or comments on the OpenTopography Portal batch download capability to info@opentopography.org

I. DownThemAll!

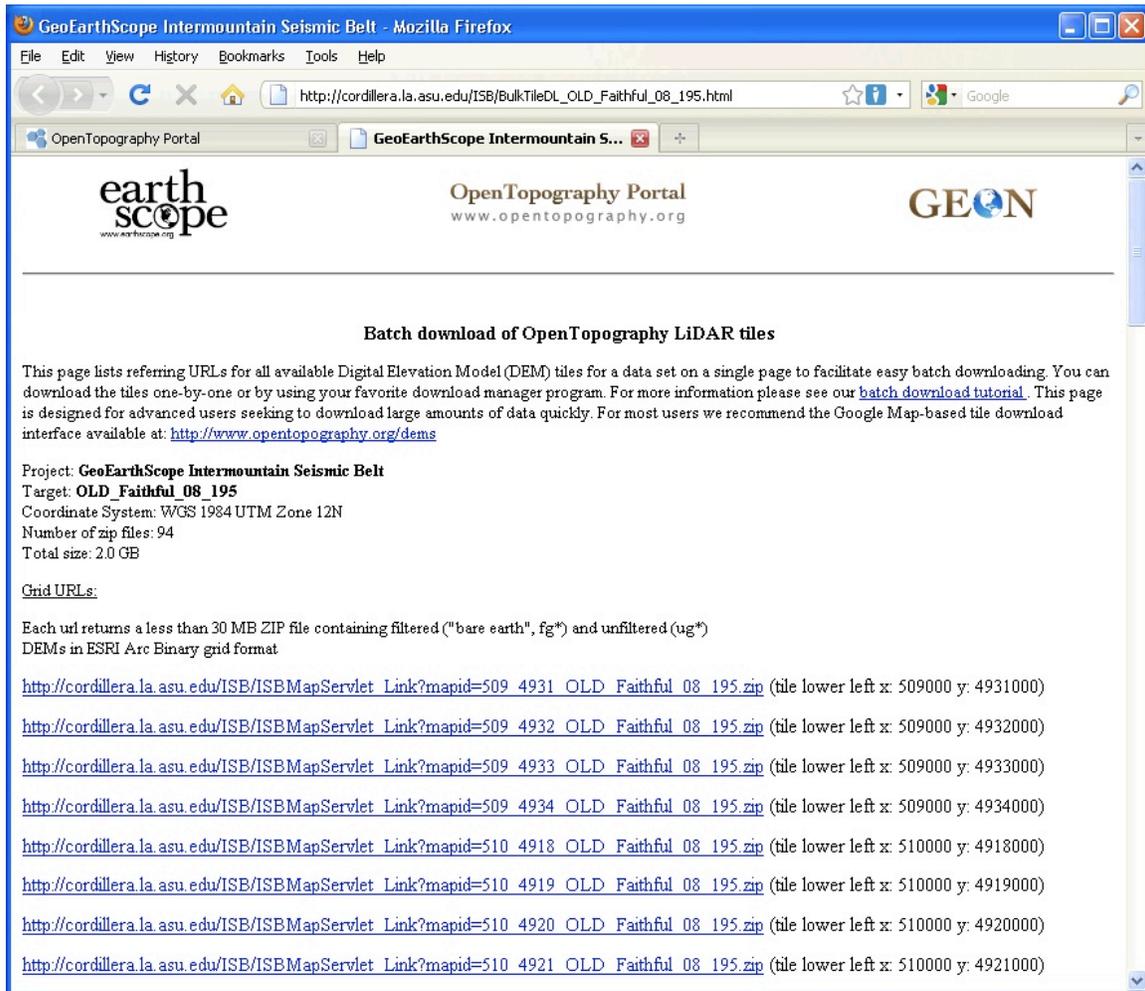
DownThemAll! (<http://www.downthemall.net/>) is a popular and free download manager for the Firefox web browser. Once you've installed DownThemAll! (dTa), use the following steps to download data from OpenTopography:

From the batch downloads page
(<http://opentopo.sdsc.edu/gridsphere/gridsphere?cid=bulkd1>)



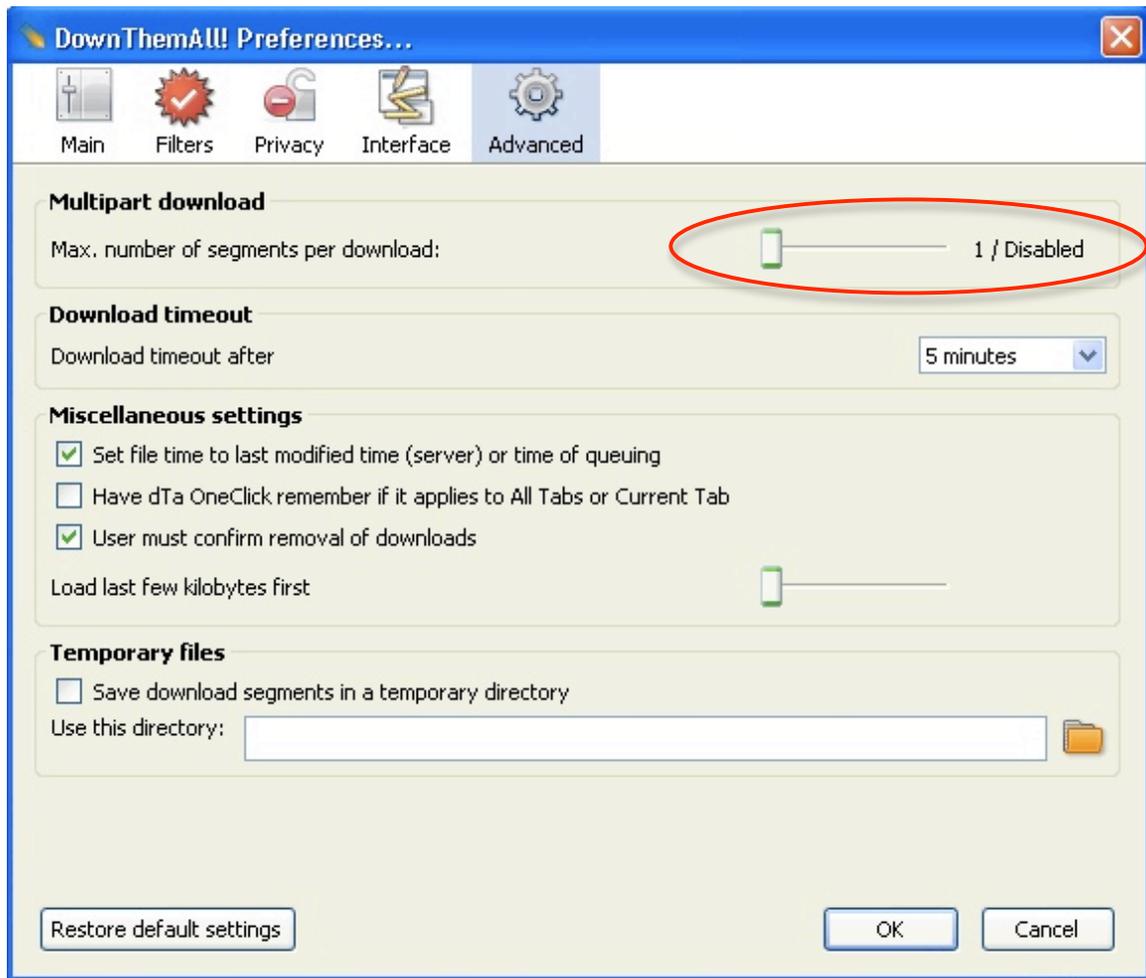
Clicking a "target" (i.e. a data set subset) link such as the "Old Faithful" portion of the Intermountain Seismic Belt GeoEarthScope dataset loads a page that lists referring URLs for all available 1 km² Digital Elevation Model (DEM) tiles for a data set on a single page to facilitate easy batch downloading.

Each URL on the page below returns a .zip file that contains bare earth (ground) and unfiltered (all returns) DEMs. You could download the tiles one-by-one, but a download manager program can pull them all with minimal work on your part. Note that each page lists the # of files and the total data volume you are going to get back.

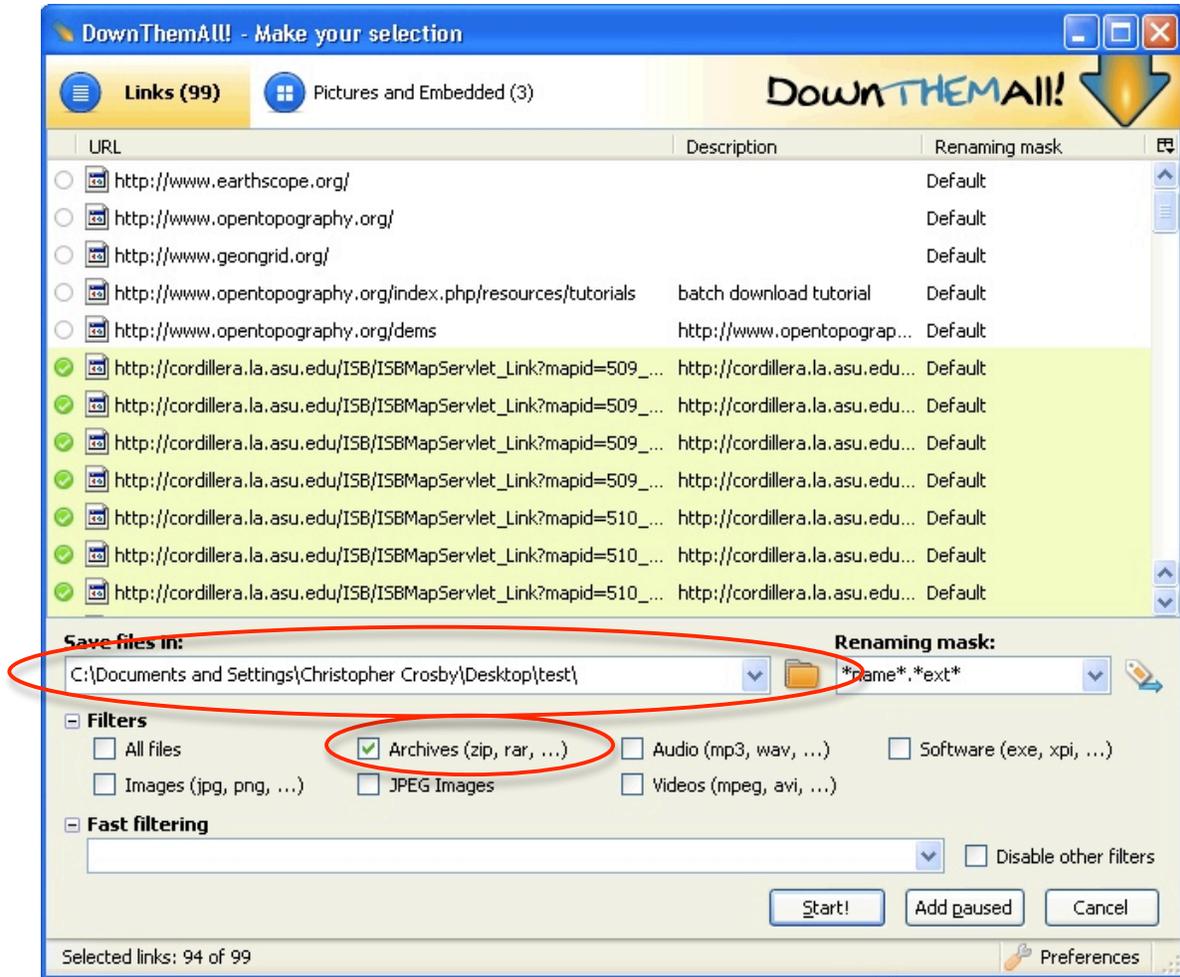


Above is the page you'll want to run the download manager to sequentially download all of the URLs listed on the page.

IMPORTANT: Before you run dTa to download the files, we recommend you make a change to the default settings of the program. Navigate to “Tools” menu in Firefox > “DownThemAll! Tools” > “Preferences” and select the “Advanced” tab. On the “Advanced” tab you’ll want to disable “Multipart Download” by moving the slider bar all the way to the left until the dialog reads “1 / Disabled”. This change seems to lead to fewer failures during download.



Once you've modified the preferences of dTa as noted above, navigate back to "Tools" > "DownThemAll! Tools" > but this time select "DownThemAll!..." Doing so loads a the dTa dialog that looks like this:

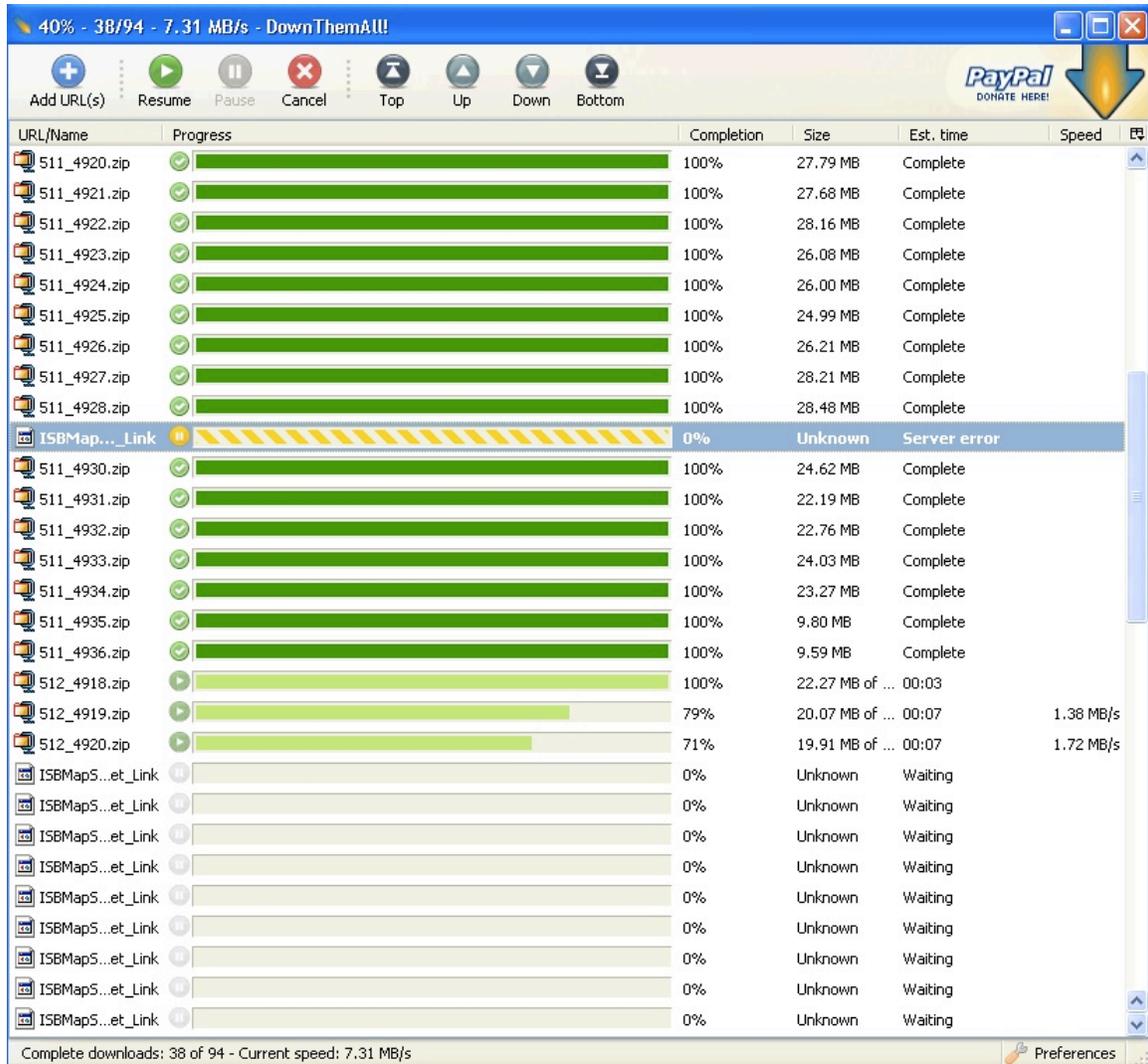


dTa will recognize every link on the page but since all we want are URLs that point to ".zip" files, we select only the "Archives (zip, rar,...)" filter option and leave all other boxes unchecked.

In the "Save files in:" box, define where you want to put the downloads.

Once you've got everything set, click "Start!"

Once dTa starts running you get a dialog box that shows the status of the downloads. Depending upon the number of files, server load, and your bandwidth, it may take a while for the downloads to complete.

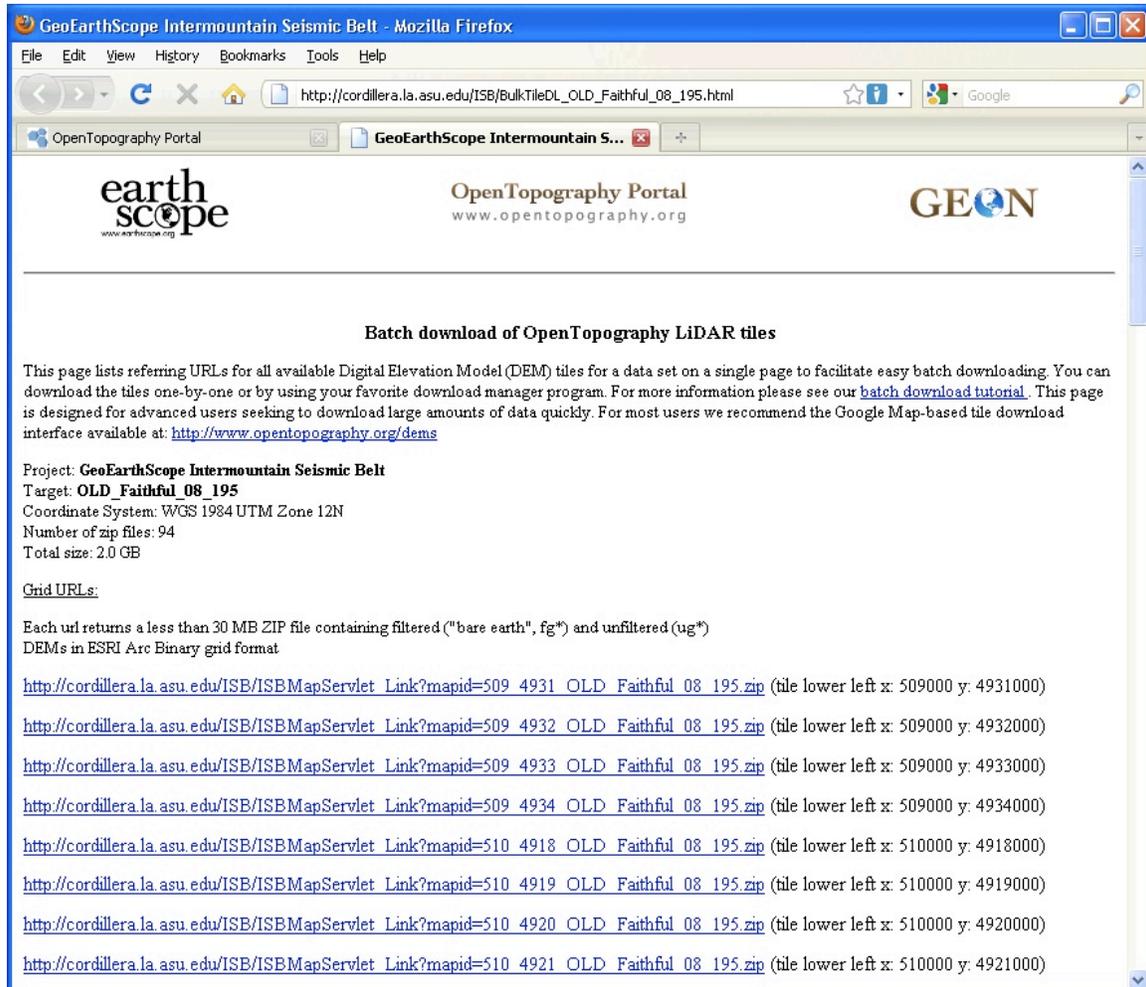


In some cases, a download will hang up - for example the yellow bar in the example above listed as a "Server error". In this case you can select that file and click on the "resume" button at the top to restart the download. If you have a few failed downloads, you can right click in the dTa box and select "Remove completed tasks" to remove the files that succeeded. Then, select all of the remaining files and restart them.

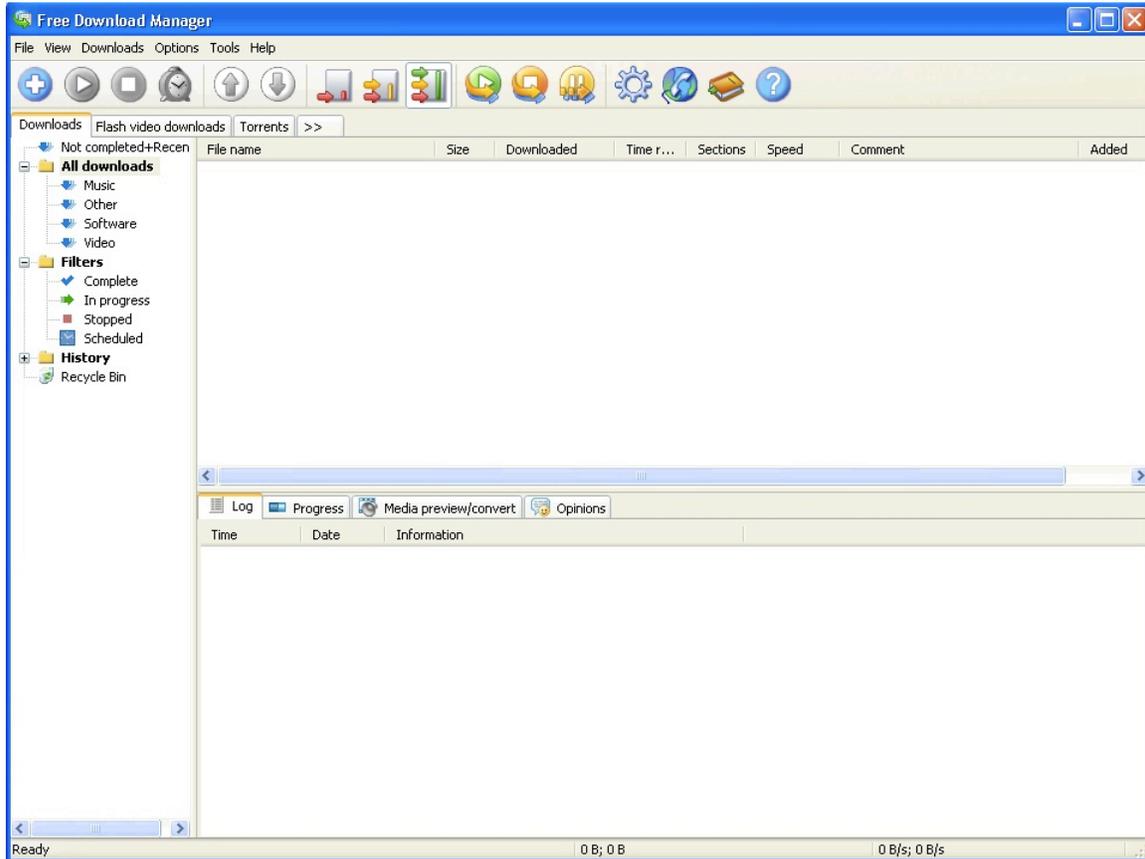
II. Free Download Manager

The Free Download Manager (<http://www.freedownloadmanager.org/>) is a free-standing application that is a good option for users who do not use the Firefox browser and therefore can't use DownThemAll!. FDM is a windows only application.

Once you've downloaded and installed FDM, follow the first two steps of the DownThemAll! tutorial above to get to the webpage that lists the referring URLs for the DEM tiles for a given dataset:

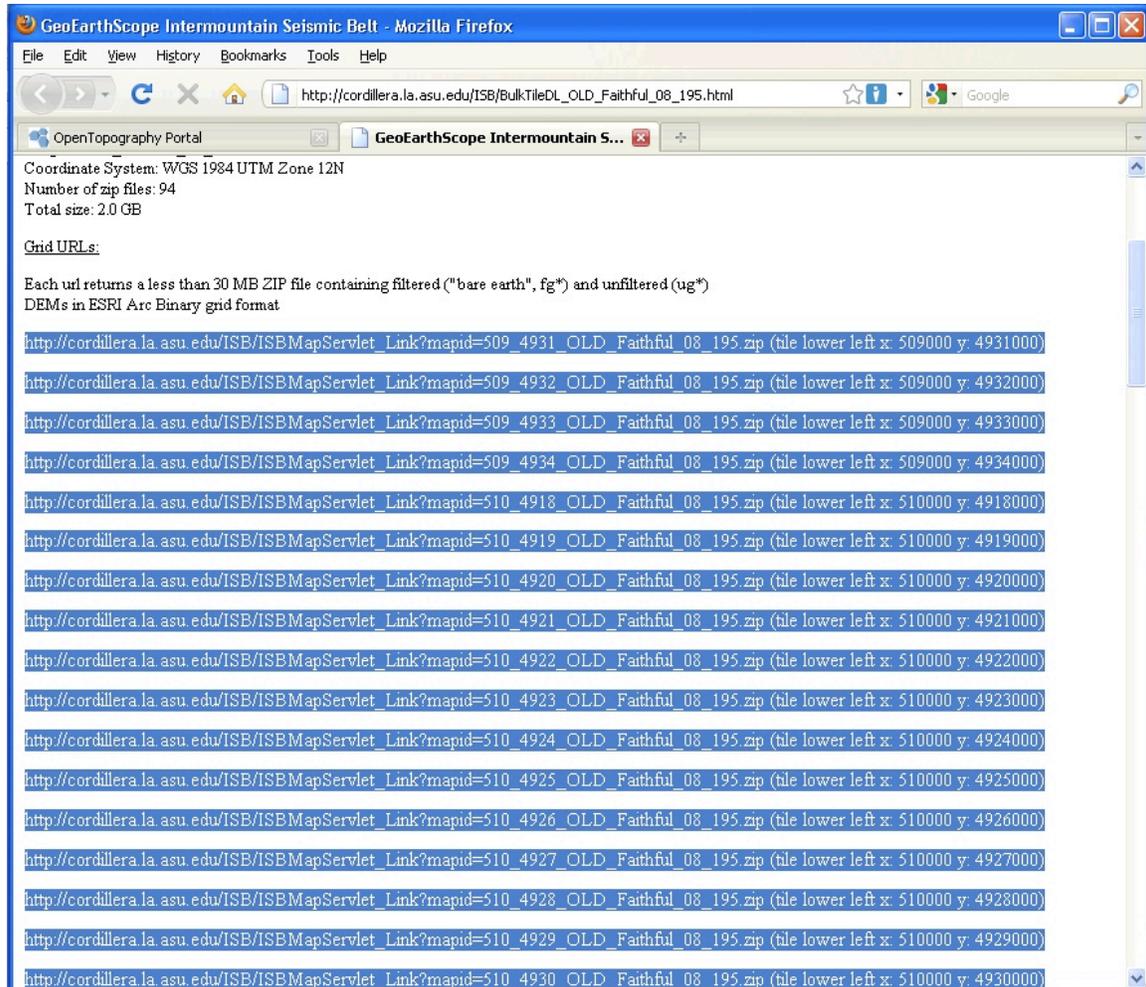


The Free Download Manager interface looks similar to the dTa interface discussed above but functions slightly differently since it is not embedded in the browser.



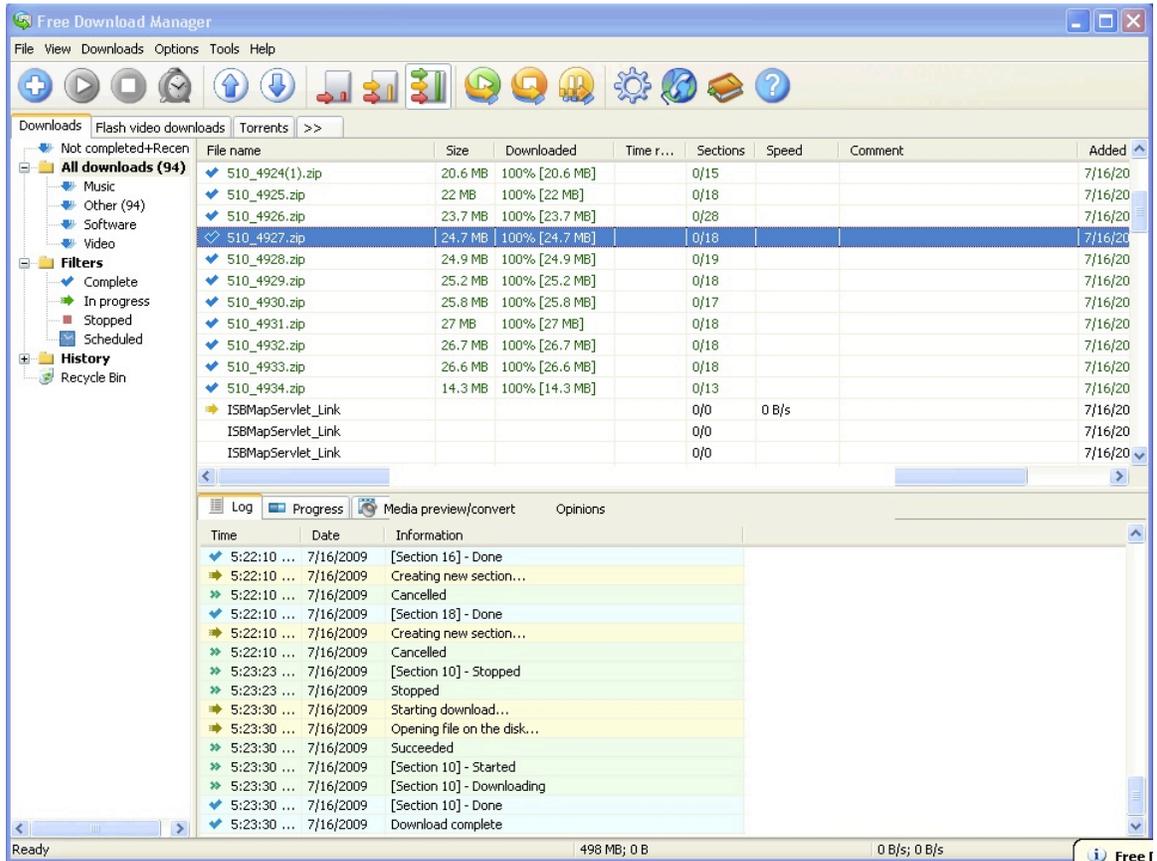
FDM has lots of options, but for the sake of this simple tutorial, we will stick with the basics. First, it will place downloaded files in C:\Downloads\ by default - to change the default download directory click on “Options” > “Settings” > then select “New Download” from the “Downloads” menu and click the “Set default download folder”.

Since FDM is not part of the browser, it doesn't discover the URLs on the page the same way that dTa does. The simplest way to provide FDM a list of URLs to download is to click and drag to select all of the URLs on the download page like this:



Once the URLs have been selected, copy them (control + C) then go to the FDM interface and select "File" > "Import" > "Import list of URLs from clipboard". You will be prompted to "Select a Group", leave the default and click OK.

Like dTa, FDM will display status of each download as it runs:



If downloads get stuck, they can be stopped and restarted in a similar manner to dTa as discussed above.