

Oracle® Spatial and Graph
GeoRaster Batch ETL User Guide
12c Release 1 (12.1)

September 2012

Table of Contents

1. Introduction.....	3
2. Welcome page.....	3
3. Database connection page.....	4
4. Choose an option page.....	4
5. Choose table and column page.....	6
6. Loading to GeoRaster - Edit batch file page.....	7
6.1 Edit options window.....	9
6.2 The GDAL Create Options.....	9
6.3 Editing options for a group of files.....	10
6.4 Edit options for Sub-Datasets.....	11
7. Extracting from GeoRaster – Edit Batch File page.....	12
7.1 Extracting a group of files.....	13
8. Run Batch File page.....	13
8.1 Progress report page.....	14
9. Log files and error reposts.....	15
References.....	15

1. Introduction

This document explains how to use the GeoRaster ETL wizard tool for loading and extracting raster data into and from GeoRaster.

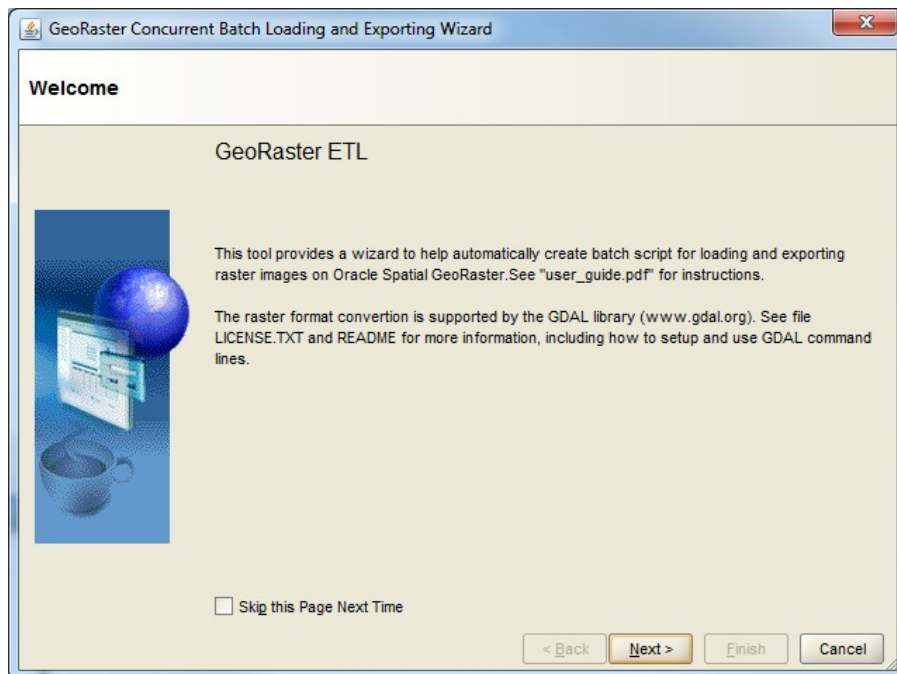
The goal of the GeoRaster ETL wizard tool is to automate and enable concurrent batch loading and exporting of various image and raster files using GDAL. This powerful tool can load and export large numbers of raster and image files in batches and concurrently. It defines an XML schema and provides a graphical user interface to create loading and exporting description files in XML. Each description file describes how to load or export a series of raster files into or from GeoRaster in a batch.

After the XML description files are created, you can use the same wizard tool to invoke multiple description files to concurrently load and export raster files in batches. Any run-time failures are caught and logged, but they do not stop the batch loading or exporting processes. This tool supports all raster formats supported by GDAL.

The README file has instruction on how to set up and launch the wizard. This guide explains how to use it.

2. Welcome page

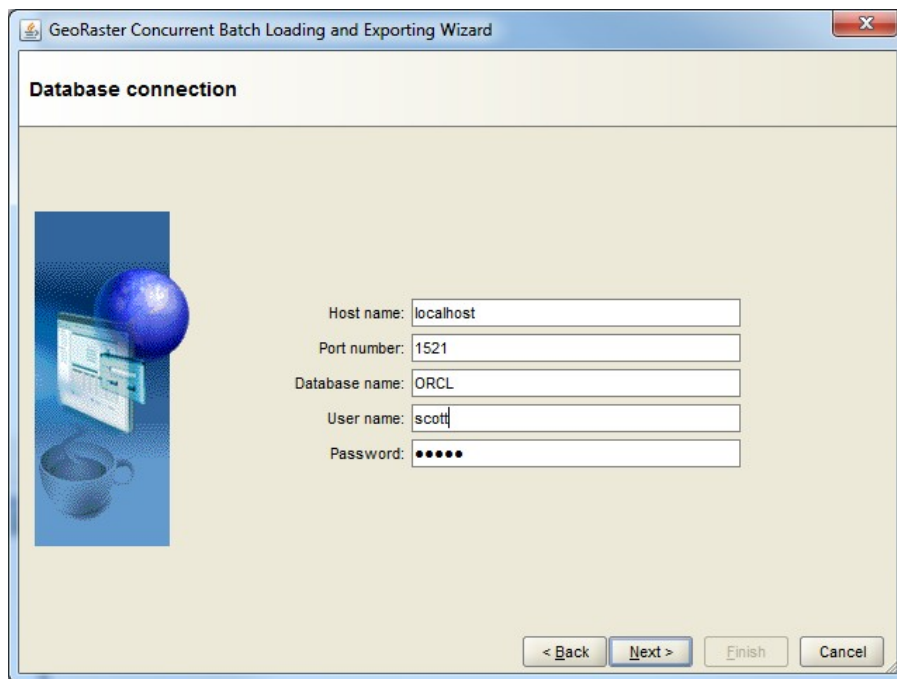
This is the Welcome page that will appear when you launch the application:



You can choose to skip that page next time by checking “Skip This Page Next Time”.

3. Database connection page

This is the “Database connection” page:

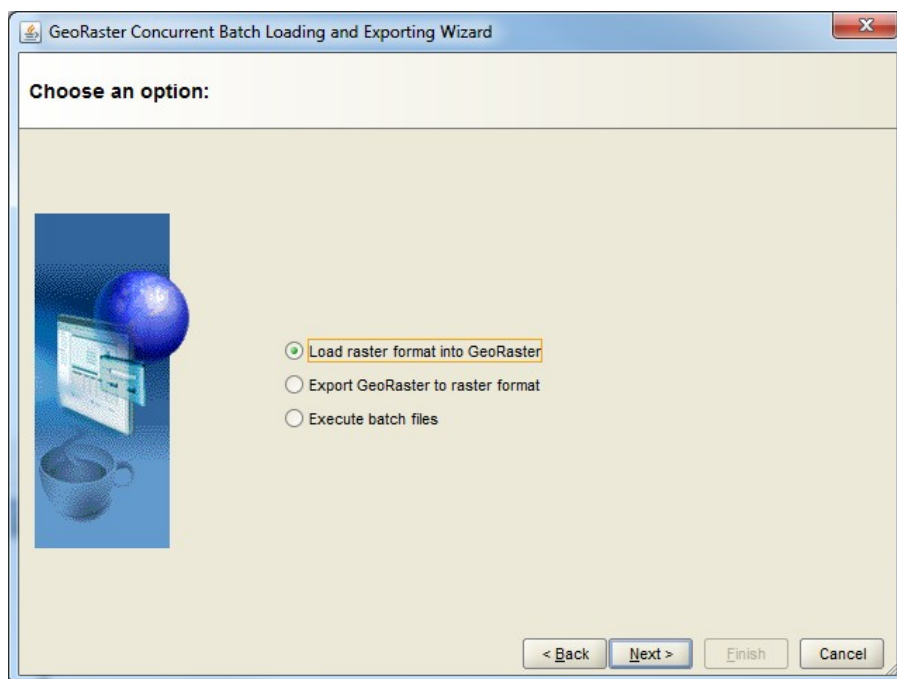


The screenshot shows the 'Database connection' page of the 'GeoRaster Concurrent Batch Loading and Exporting Wizard'. The window title is 'GeoRaster Concurrent Batch Loading and Exporting Wizard'. The page has a header 'Database connection' and a decorative image on the left showing a globe, a document, and a cup. On the right, there are five text input fields: 'Host name' with 'localhost', 'Port number' with '1521', 'Database name' with 'ORCL', 'User name' with 'scott', and 'Password' with five dots. At the bottom right, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Enter the information requested here and click Next.

4. Choose an option page

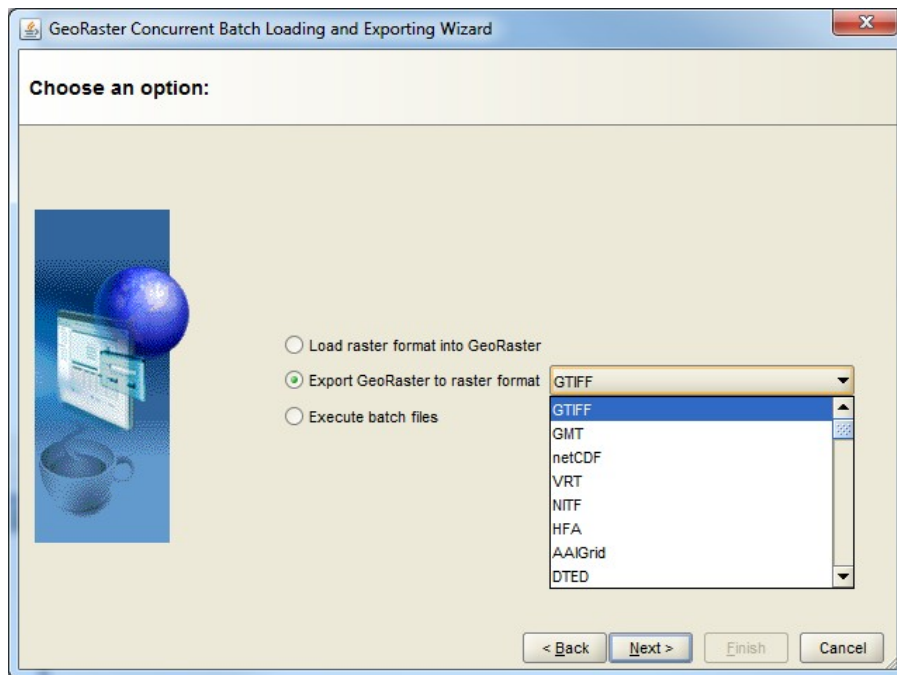
Select one of the showing options:



The screenshot shows the 'Choose an option' page of the 'GeoRaster Concurrent Batch Loading and Exporting Wizard'. The window title is 'GeoRaster Concurrent Batch Loading and Exporting Wizard'. The page has a header 'Choose an option:' and a decorative image on the left showing a globe, a document, and a cup. On the right, there are three radio button options: 'Load raster format into GeoRaster' (which is selected), 'Export GeoRaster to raster format', and 'Execute batch files'. At the bottom right, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

- Select the first option if you want to prepare a batch scripts to **load** raster data into GeoRaster;
- Select the second options if you want to prepare batch scripts to **export** raster data from GeoRaster.
- Select the third options if you already have batch files that you want to **run**.

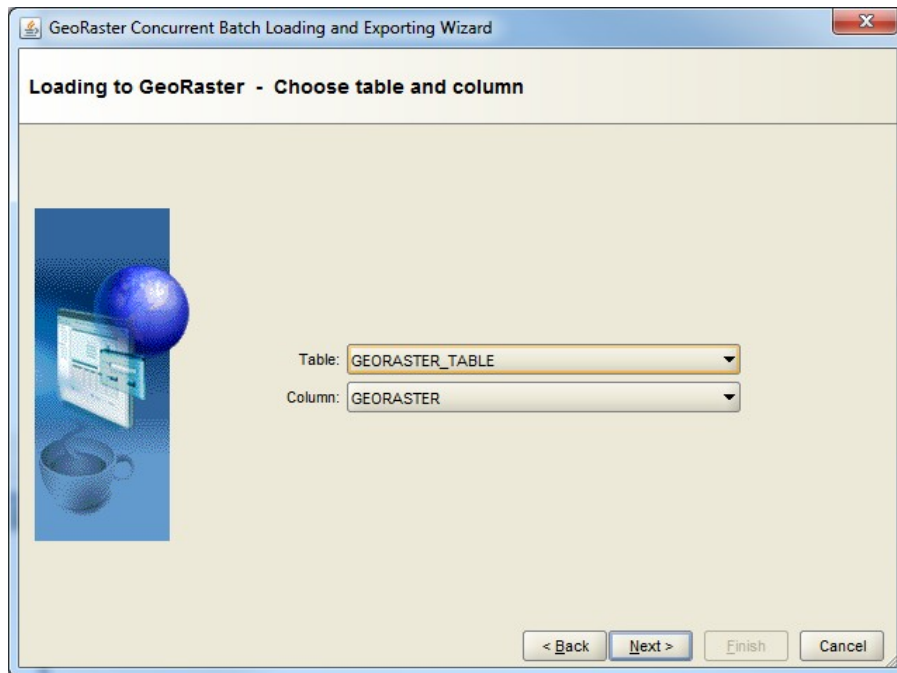
If you select the second option, the wizard displays all the available drivers that your GDAL installation can use to generate output file formats. The default is “GTIFF” for files in GeoTiff raster format.



Click Next to proceed to the next page. If you have selected “Execute batch files” you will be directed to “Run batch files”; otherwise, you will go to the “Choose table and column” page.

5. Choose table and column page

That page shows a list of all tables that contains columns of sdo_georaster type.



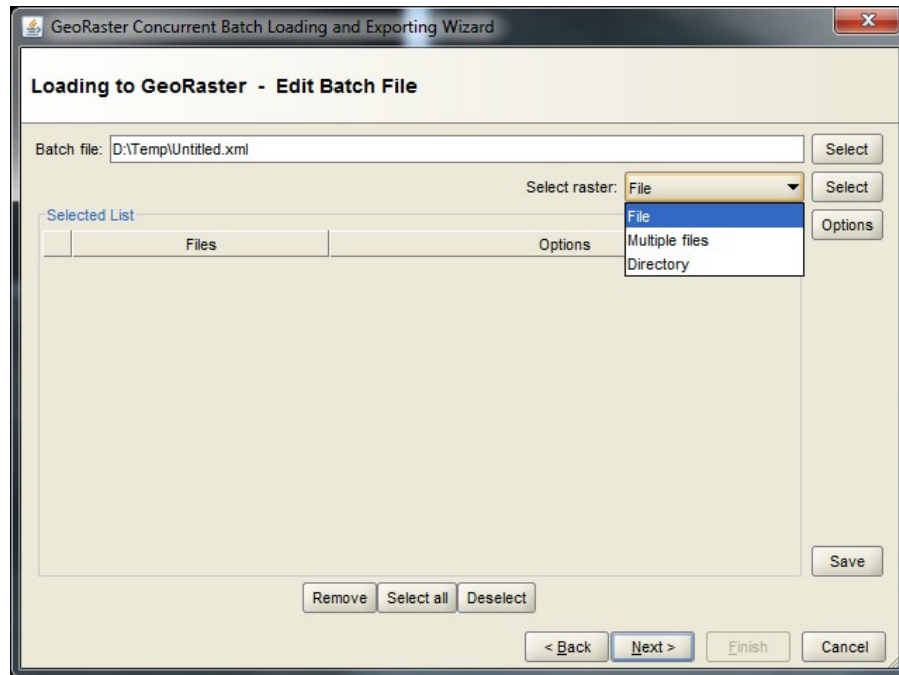
Select the table and column that you want to use for loading or extracting raster data and click Next to proceed.

Note that each batch script file should act on a particular selection of table and column. You should create and save different batch script files for different tables but you can run them simultaneously afterward.

6. Loading to GeoRaster - Edit batch file page

The following page allows you to create new batch script files or edit existing ones.

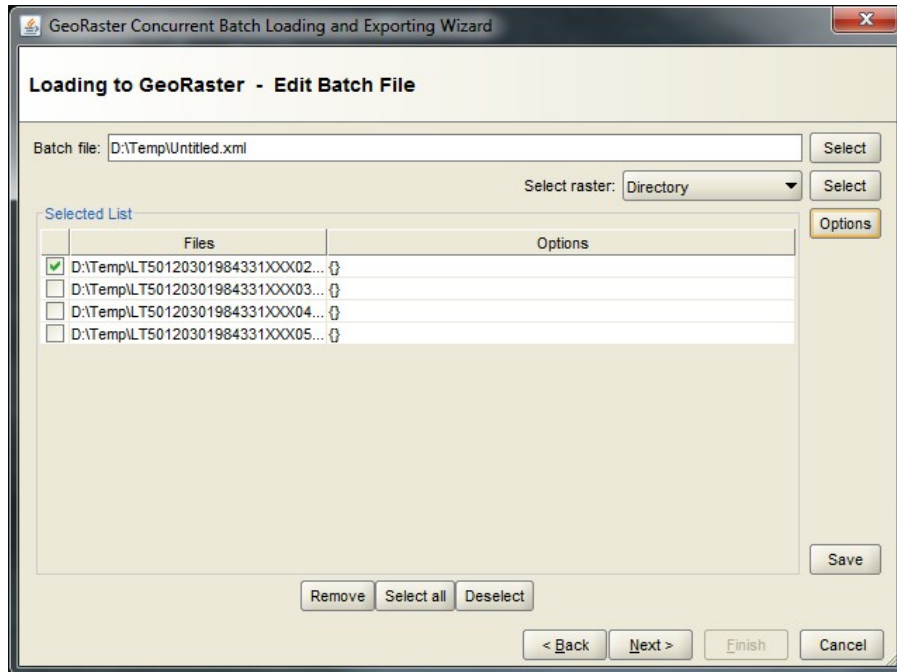
- Click Select (next to Batch file) to load an **existing** batch script file;
- Click Save to write the current batch script to the file system.



When you edit a batch script for loading raster data into GeoRaster, first you need to select the raster files you want to load. You can do that by clicking Select (next to Select raster). But before that you may select from "Select raster::

- Select "File" to select just one raster file to the batch script
- Select "Multiples Files" to select several files at once.
- Select "Directory" to select all the files from a directory or folder.

Note: Only the files supported by GDAL installation will be loaded to the "Selected List".



Once you have a file checked on the “Selected List” you should be able to specify how that file will be loaded into GeoRaster. To do that, check the box next to the file name and click the Options button to launch the “Edit options” window.

You can also use the Remove button to remove files from the list, and consequently from the batch script. Use Select all and Deselect to change the selection of several files at once.

6.1 Edit options window

This is the window that will capture all the specific settings that define how the GeoRaster object will be organized.

The 'Table operation' section has two radio buttons: 'Update' and 'Insert'. The 'Insert' button is selected. Below the radio buttons is a table with three columns: GEORID, NAME, and GEORASTER. The first row contains the values 75, Bolder, CO, and sdo_geor.init('RDT_1').

GEORID	NAME	GEORASTER
75	Bolder, CO	sdo_geor.init('RDT_1')

The 'Create options' section has a table with two columns: Options and Values.

Options	Values
BLOCKXSIZE	1000
BLOCKYSIZE	1000
BLOCKBSIZE	3
SRID	4326
SPATIALEXTENT	TRUE
EXTENTSRID	4326
NBITS	
INTERLEAVE	PIXEL
COMPRESS	
BLOCKING	YES

At the bottom of the window are 'Cancel' and 'Confirm' buttons.

- Use the Table operation “Update” if you want to load the file to replace the data of an existing GeoRaster.
- Use the Table operation “Insert” to enter the values to be filled into the column of the new row in that table.

By using the Insert option, only the columns that you provide values will have values inserted into it. Any restriction that the column might have should be observed or will cause error during the processing.

By selecting Update you should also provide a simple WHERE clause that uniquely identifies the GeoRaster object that you want to update.

The Create Options will be explained in the next section.

6.2 The GDAL Create Options

The table at the bottom of “Edit options window” shows the GDAL Create Options specific for the output GDAL format..

For loading to GeoRaster the options are described on www.dal.org/frmt_georaster.html.

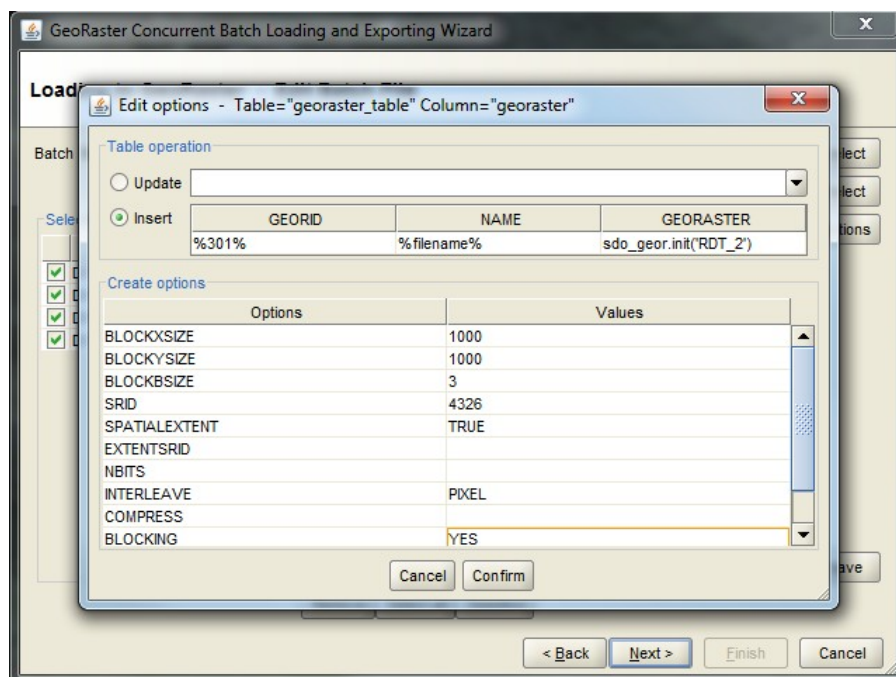
See the www.gdal.org “Supported Format” link for more information about the options for other formats. Note that some of the GDAL formats don’t have any Create Options and in that case the list of options will be empty.

6.3 Editing options for a group of files

When you are planning to load several files to the same table and column, it might be convenient to select the all files at once before clicking Options, so that you can establish the common parameters that apply to all the raster loading process.

But to avoid duplication of the values in the columns of the table selected, you can use the replacement tokens as explained here:

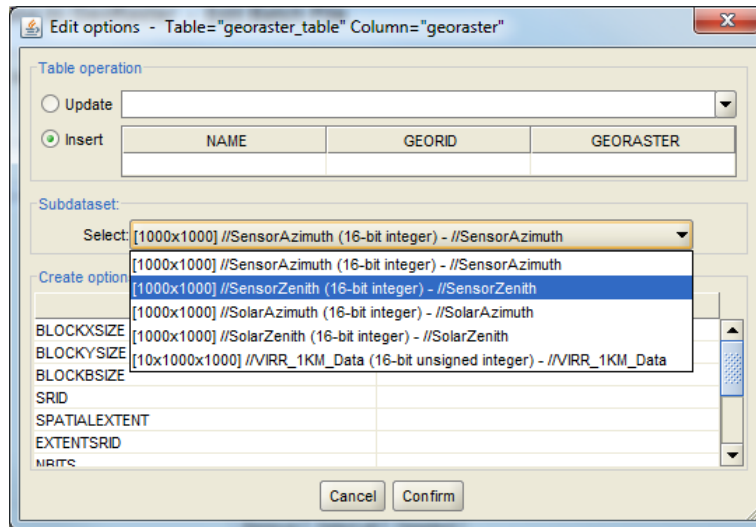
- Create a sequential numeration by entering the initial value between percent signs (%), ex.: “%1%” or “%300%”.
- Copy the name of input file to a column by using the token “%filename%”.



You can also enter values that will be equal for all the rows, for example, if you have a date column to register when the GeoRaster was loaded. Just enter the value on the corresponding column with no token sign and that value will be applied to all the rows.

6.4 Edit options for Sub-Datasets

Some GDAL supported raster formats are capable of storing sub-datasets, ex. HDF4, HDF5 and NetCDF. The GDAL distribution for this package doesn't support those format but you can always add GDAL plugins to you installation or setup an entirely different GDAL distribution to use with this wizard.

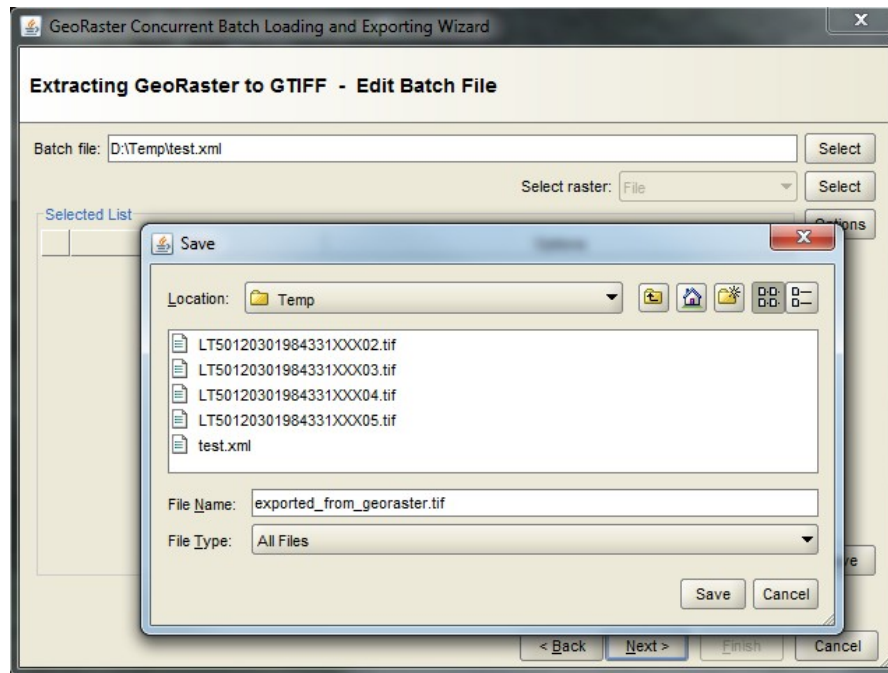


Note that files with sub-datasets should not participate in editing options for a group of files, as described in 6.3. You should edit options for each file sub-dataset individually.

Note that some HDF4, HDF5 and NetCDF files are not properly recognized by the GDAL drivers. For example, the dimensions could be misinterpreted or the reference system not recognized.

7. Extracting from GeoRaster – Edit Batch File page

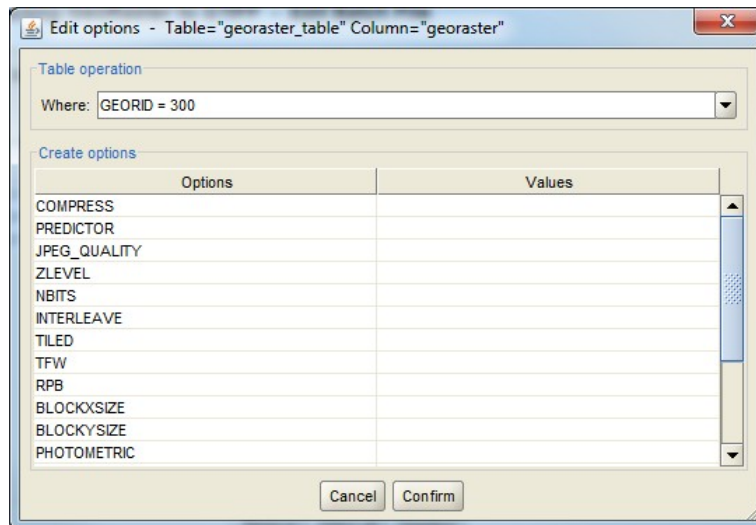
The process of editing a batch file to extract raster data from GeoRaster is similar to the one for loading (explained on section 6), except that you can only select one output file each time.



Note that GDAL doesn't distinguish the file format by the extension, so it is up to you to follow the convention and add ".tif" on the file name if the selected format was GTIFF, for example.

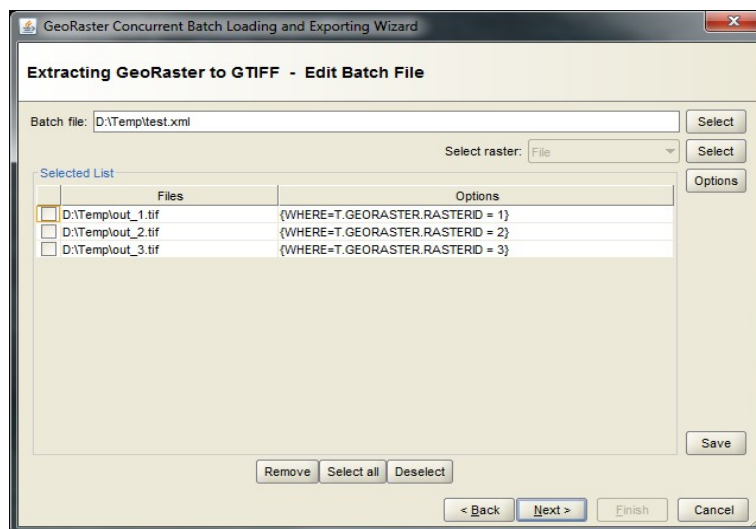
As explained in section 6, you should now check the file name and click Options to open the "Edit options" window.

In the “Edit options” window you should enter a simple WHERE clause that uniquely identifies the GeoRaster object that you are planing to export. You can also enter the GDAL Create Options that are available for the raster format you have selected.



7.1 Extracting a group of files

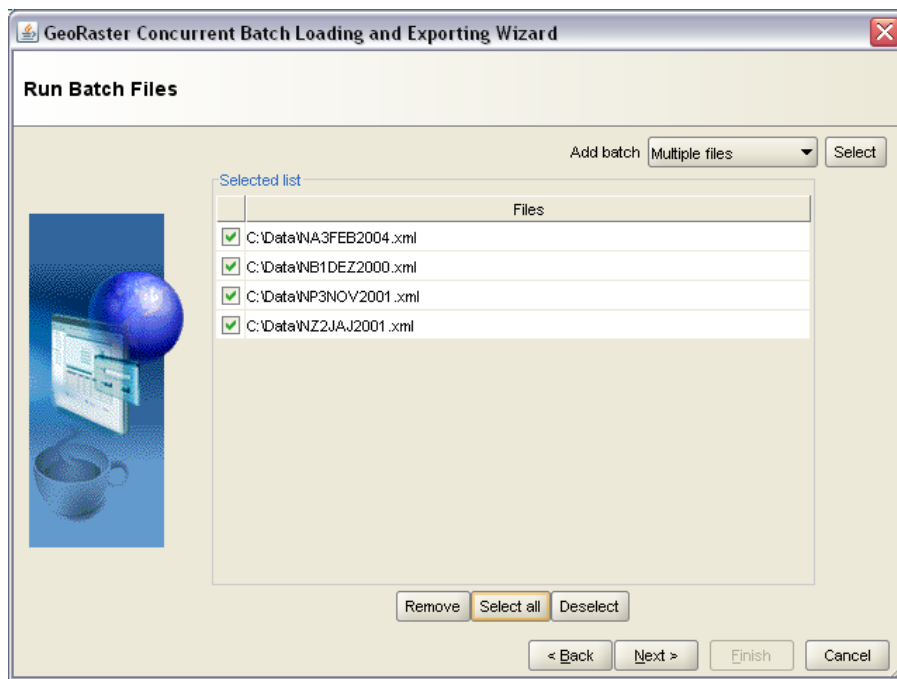
On the previous section, if the WHERE clauses results in more than one row the wizard will create one output file name for each GeoRaster found on that query, adding (“_” + RasterId) to the file name you entered before. See example:



But if it was not your intention to select several GeoRaster objects, you can always remove the files from the list and start the process again.

8. Run Batch File page

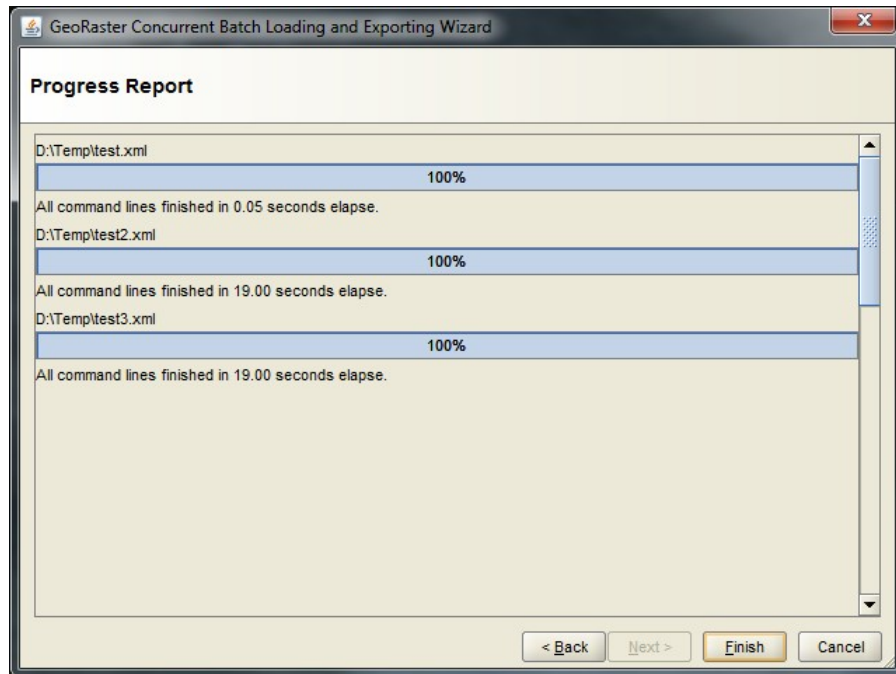
You can click Select (next to Add batch) to add batch scripts to the Selected list. Use the check boxes to select the batch script files that you want to execute.



Click Next to start the execution of the selected batch script files. The script files not selected will not run, but you can come back and select them afterward by clicking Back on the Progress report page.

8.1 Progress report page

The progress report page will show the progress of all the running batch script, with the final report of elapsed time.



At that point, click Finish to perform the operation, Cancel to close the wizard without saving any specifications, or Back to go back to the previous pages to run or edit batch script files.

9. Log files and error reports

All the reports generated from the execution of batch script files by the wizard will be recorded on log file stored on the same folder where the application was started, ex.:

```
Mon Oct 22 14:36:03 EDT 2012 INFO:Prepare for executing command lines...
Mon Oct 22 14:36:03 EDT 2012 INFO:Executing batch script (D:\Temp\test.xml)
Mon Oct 22 14:36:03 EDT 2012 INFO:No command line to execute in D:\Temp\test.xml. 0.00 seconds elapse
Mon Oct 22 14:39:02 EDT 2012 INFO:Prepare for executing command lines...
Mon Oct 22 14:39:02 EDT 2012 INFO:Executing batch script (D:\Temp\test.xml)
Mon Oct 22 14:39:02 EDT 2012 INFO:Prepare for executing command lines...
Mon Oct 22 14:39:02 EDT 2012 INFO:Executing batch script (D:\Temp\test2.xml)
Mon Oct 22 14:39:02 EDT 2012 INFO:Prepare for executing command lines...
Mon Oct 22 14:39:02 EDT 2012 INFO:Executing batch script (D:\Temp\test3.xml)
Mon Oct 22 14:39:02 EDT 2012 INFO:No command line to execute in D:\Temp\test.xml. 0.00 seconds elapse
Mon Oct 22 14:39:21 EDT 2012 INFO:Fail to parse the description file D:\Temp\test3.xml
Mon Oct 22 14:39:21 EDT 2012 INFO:You get an exception! See log:D:\Temp\2012102223921_error_report.log
```

If an exception occurred check the error report files as indicated in the log file.

References

Oracle® Spatial and Graph GeoRaster Developer's Guide
GDAL GeoSpatial Data Abstract Library – www.gdal.org