

Integrating SimDiff with git + SourceTree

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Introduction

Git is a distributed version control system. The primary interface for working with git is the command-line, using commands such as `git commit`, `git push`, etc. However, there are a number of GUI tools that have been built on top of the command line that provide a more convenient interface for working with a repository. Some of these interfaces support interactive diff and merge tools - others do not.

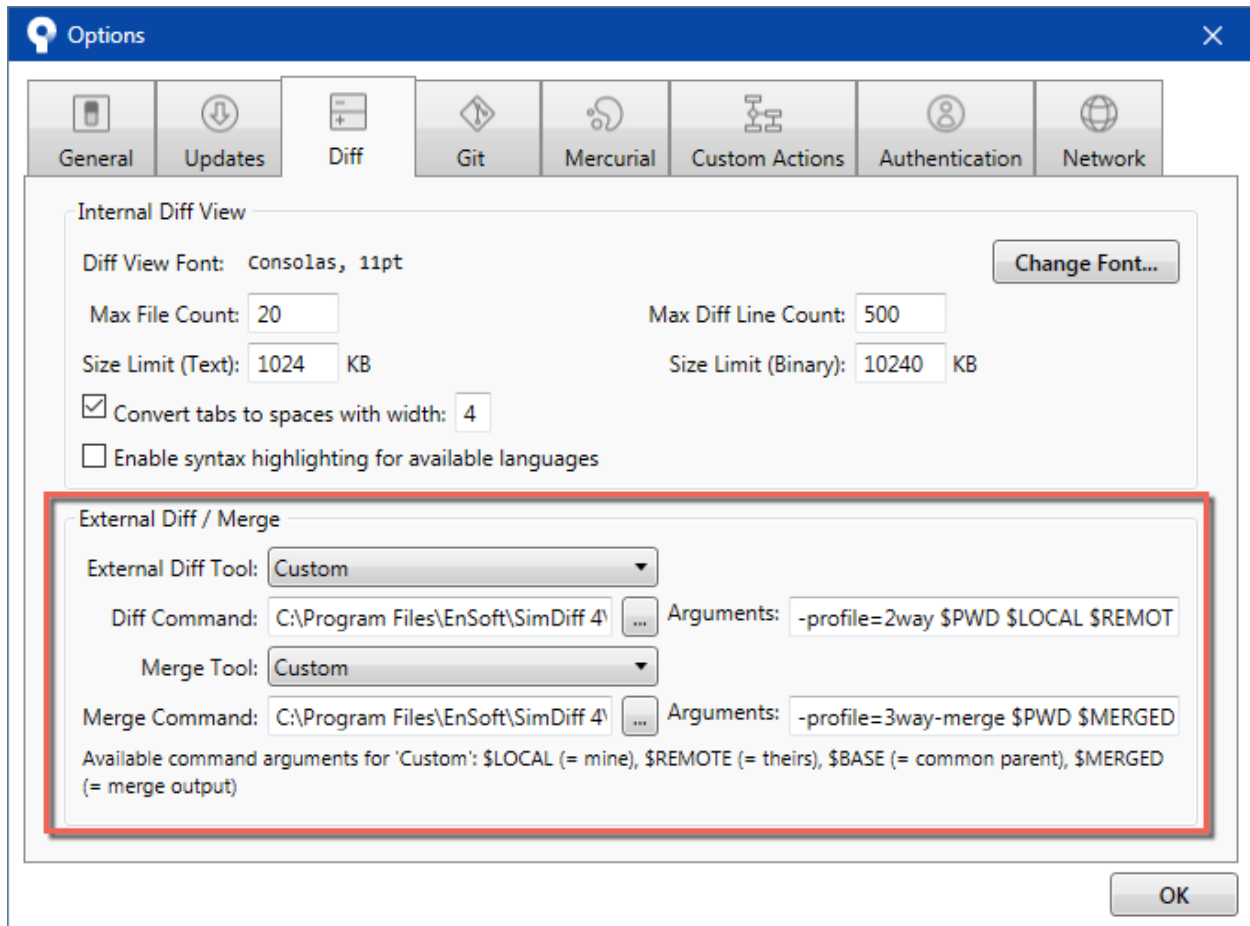
The following instructions explain how to configure SimDiff for use with git while using the SourceTree GUI tool.

The configuration for this repository client requires the usage of Tool Selector. ToolSelector is a utility program developed by EnSoft that can be used to select between one or more configured tools based on certain properties of the input arguments (e.g. file type). For more information about ToolSelector, please refer to the `ToolSelector User Guide.pdf` located at your ToolSelector directory (by default, `C:\Program Files\EnSoft\SimDiff\utils\toolselector`).

Note: if you are using a SimDiff version older than 2020a.2, then the ToolSelector directory is `C:\Program Files\EnSoft\SimDiff\utils\toolselector-20120215-1803`

Configuration

1. Download `sourcetree-SD4.piz` from <http://www.ensoftcorp.com/simdiff/repository/sourcetree-SD4.piz>. Rename as `sourcetree-SD4.zip` and unzip it.
2. Copy the extracted files to your toolselector directory (by default, `C:\Program Files\EnSoft\SimDiff\utils\toolselector`).
3. Configure SourceTree's external diff/merge tools as follows:
 - o Open SourceTree
 - o Click *Tools > Options*
 - o Enter the following information in *External Diff / Merge* section under the *Diff* tab (as shown in image below)
 - o External Diff Tool: *Custom*
 - Diff Command: `C:\Program Files\EnSoft\SimDiff\utils\toolselector\toolselector.exe`
 - Arguments: `-profile=2way $PWD $LOCAL $REMOTE`
 - o Merge Tool: *Custom*
 - Diff Command: `C:\Program Files\EnSoft\SimDiff\utils\toolselector\toolselector.exe`
 - Arguments: `-profile=3way-merge $PWD $MERGED $REMOTE $BASE $LOCAL`

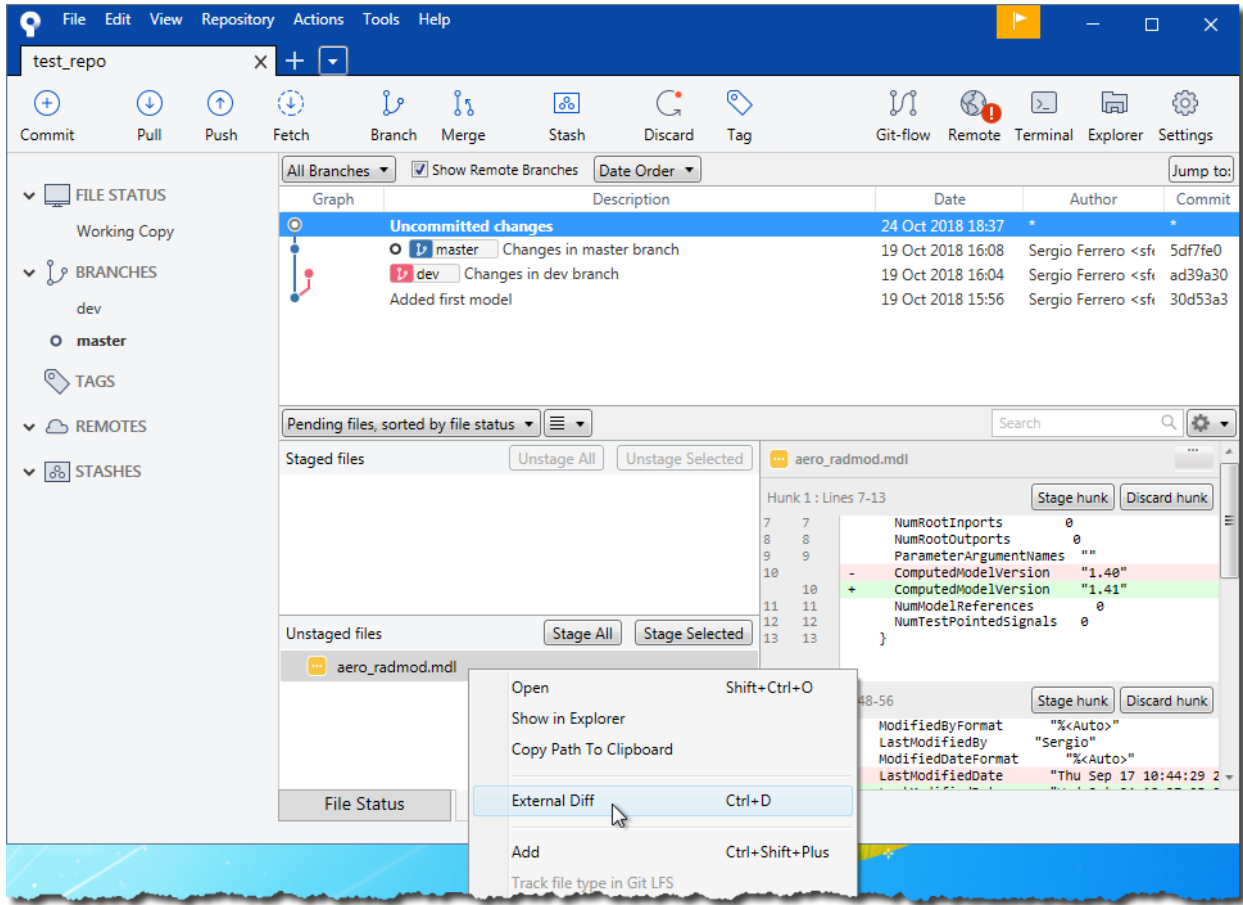


Notes

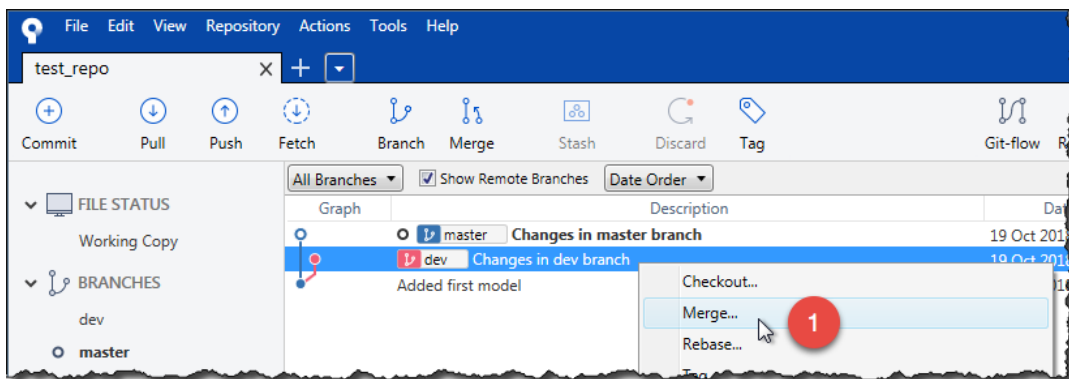
- If SimDiff and ToolSelector are not installed to their default locations, you will need to modify the *Diff Command* and *Merge Command* paths given in step 2 above.
- If ToolSelector is installed to a location other than its default location within the SimDiff directory, you will need to update `simdiff4-cd.bat` with the correct absolute or relative path to `simdiff4.exe`.
- We strongly recommend using a 3-way diff as part of your merge process, because a 3-way diff tells you not only what differs between two versions of a model, but also which changes were made in which model. 3-way diff is included in all editions of SimDiff.

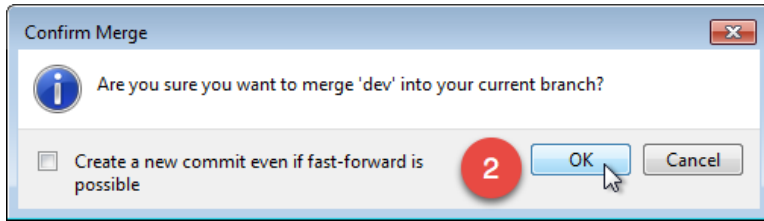
Usage

To visualize differences between 2 versions of a model, you can click the *External Diff* menu option and SourceTree will open SimDiff to visualize the differences. The image below shows this option when comparing an unstaged file with the copy in the repository.

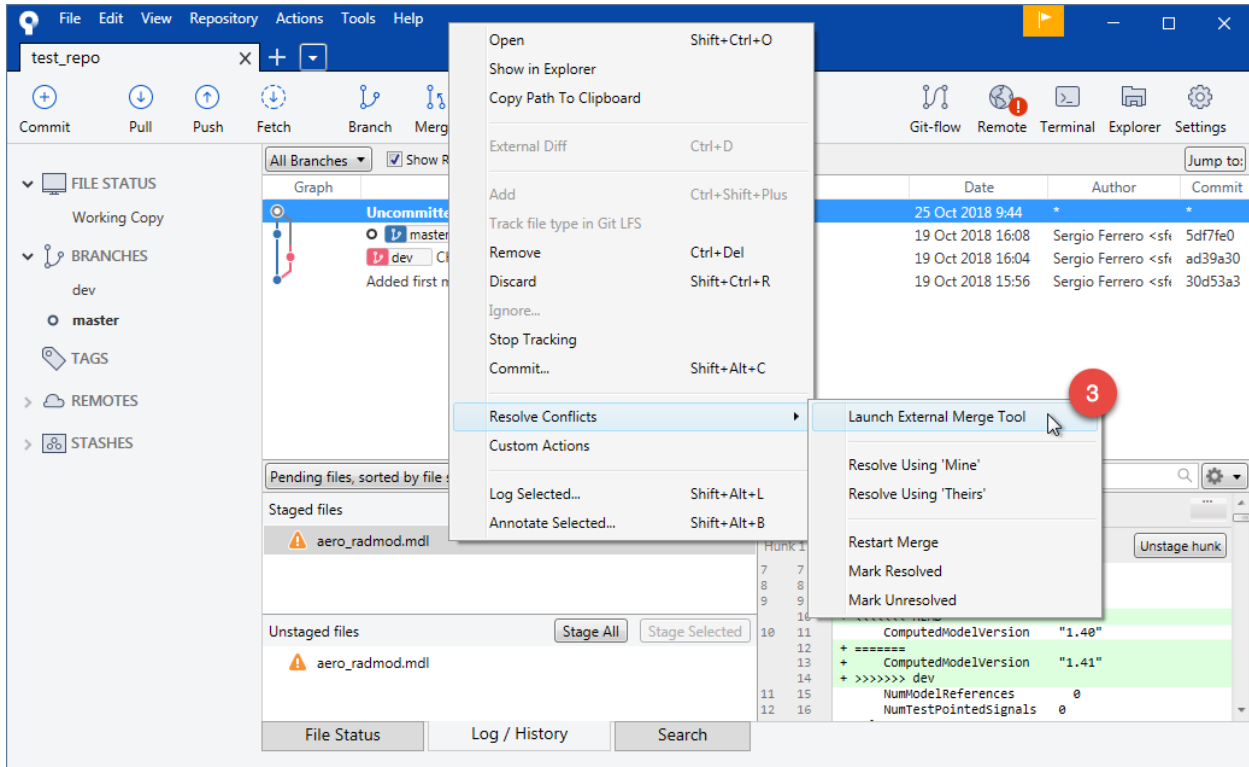


Similarly, SimDiff can be launched when SourceTree detects a merge conflict. This section shows the workflow to be followed when merging a branch to the checked out branch. To start, right click the branch to be merged and follow the steps described in the images below.

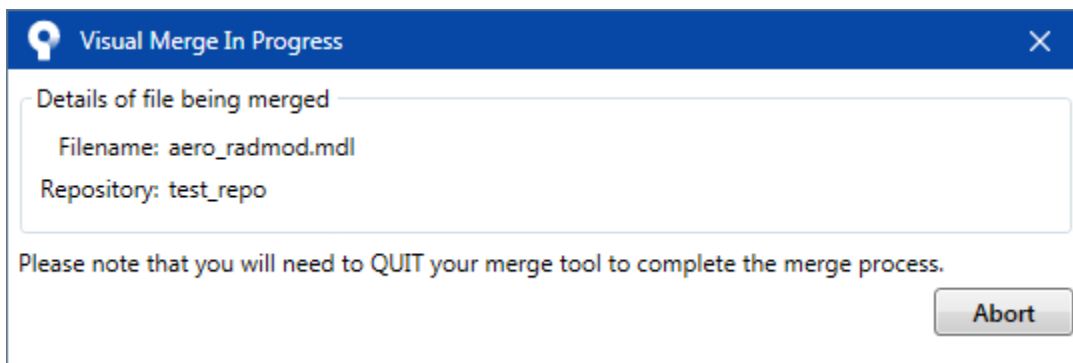




When you have a merge conflict, select the *Uncommitted Changes* branch, right-click on the conflicted file, and select *Resolve Conflicts > Launch External Merge Tool*.



SourceTree will show the following dialog and will open SimDiff to merge the changes.



SimDiff 4 Team

File Edit Auditing View Help

Left Model: C:\repos\git\test_repo\aero_radmod_LOCAL_7516.mdl

Right Model: C:\repos\git\test_repo\aero_radmod_REMOTE_7516.mdl

Base Model: C:\repos\git\test_repo\aero_radmod_BASE_7516.mdl

Output Model: C:\repos\git\test_repo\aero_radmod.mdl

Filters... Show: Whole Model All Changes Left Changes Right Changes

Output Model: Right Model:

7 Actual Speed

4

8

Attribute	Output Value	Base Value	Right Value
BlockType	Constant	Constant	Constant
Name	Actual Speed	Actual Speed	Actual Speed
OutDat...	sfix(16)	sfix(16)	sfix(16)
OutScal...	2^0	2^0	2^0
Value	400	400	500

Info about Actual Speed

The attributes of 'Actual Speed' were changed in the right model. Clicking will apply this change in the right model to the left/output model.

0:00.499 Diff: 5% 0/13 0/12: 0 0 0 0 0 0 0/1: 0 0 0 0 0 0 ensoft

Use SimDiff to merge the changes. Once you are done, save the model from the Simulink window and close SimDiff.

Finally, select the *Uncommitted Changes* branch, right click on the merged file, and commit it.

