

## Swift version of the CESM Land Diagnostic Package

This version allows you to make the same diagnostic plots using the task-parallel Swift system. Task-parallelism should reduce the total time needed to produce the plots. Currently the swift version is supported only on the NWSC Geyser cluster.

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### Installation:

1. Follow the instructions for installing the regular land diagnostic package. (In short, you will need installations of NCL, NCO and the "convert" tool from ImageMagick and the latest version of the land diagnostic package).
2. You will also need the Swift executable in your path. E.g., in your .tcshrc:  
setenv PATH /glade/u/home/oleson/swift-0.94/bin/:\$PATH  
See <http://www.ci.uchicago.edu/swift/wwwdev/downloads/index.php>.  
Swift requires a current version of Java.
3. From the local land diag installation, copy the following files from swift/swift\_configs/geyser to your run directory (where your lnd\_template4.2.XX.csh is located, e.g., /glade/u/home/\$YOUR\_USER\_NAME/lnd\_diag/run):  
sites.xml  
fs.data  
cf.properties  
tc.data  
Also, from the top level directory of the local land diag installation, copy the files lnd\_diag.swift and regrid\_history.swift to your run directory.
4. Create a directory for storing temporary files Swift creates while processing the diag script. This should be in a large scratch space you have access to (e.g., /glade/scratch/\$YOUR\_USER\_NAME/swift\_scratch).

### Configuration

1. To turn the swift option on, edit the lnd\_template4.2.XX.csh script and set "use\_swift" to 1.
2. Edit the lnd\_template4.2.XX.csh script and change "swift\_scratch\_dir" to be the full path of the directory you created in step 4 above (e.g., /glade/scratch/\$YOUR\_USER\_NAME/swift\_scratch).
3. Edit the lnd\_template4.2.XX.csh script and change "RUNKDIR" to the location of the lnd\_template4.2.XX.csh script and the swift configuration files (e.g., /glade/u/home/\$YOUR\_USER\_NAME/lnd\_diag/run).

4. Edit the sites.xml file and change “workdirectory” to your swift\_scratch directory (e.g., /glade/scratch/\$YOUR\_USER\_NAME/swift\_scratch). You must put in your actual “user name” here, not an environment variable.

5. Edit the tc.data file and fix the paths of any executables that are not correct (in column 3). Several of these files are located in the swift/swift\_utils directory of your local land diag installation. If you are running on geyser and using the standard land diag installation (i.e., /glade/p/cesm/lmwg/diag/Ind\_diag4.2), you shouldn’t need to change this file.

Running:

Run this version from the command line just like the original package (e.g., ./Ind\_template4.2.XX.csh >&! Ind\_template4.2.XX.out &).

Further Information:

Most error messages can be found in the last several lines of \$swift\_scratch\_dir/Ind\_diag-\*.log file. If you need help with the package, to report bugs, or have any suggestions, please contact Sheri Mickelson ([mickelso@mcs.anl.gov](mailto:mickelso@mcs.anl.gov)).

tc.data is a list of all the executables Swift will need to execute the diagnostic package.

To learn about other options for the sites.xml file, see <http://www.ci.uchicago.edu/swift/guides/release-0.92/userguide/sitecatalog.php>.

See also the ParVis website for more information:  
<http://trac.mcs.anl.gov/projects/parvis/wiki/SwiftWork/SwiftAtm>

## HISTORY

Date:	June 2013
LMWG diag version	Ind_diag4.2.14
Author:	Sheri Mickelson (Argonne National Laboratory), Keith Oleson (NCAR)
Date:	March 2013
LMWG diag version	Ind_diag4.2.08
Author:	Sheri Mickelson (Argonne National Laboratory), Keith Oleson (NCAR)
Date:	February 2013
LMWG diag version	Ind_diag4.2.06
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