You should only have to go through all these steps once -- after that, you only have to do step 4 with each new version of FORWARD, step 14 if you upgrade SSW, and steps 10-13 if the fortran codes in $FORWARD/FORCOMP change (rare) .

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1. make sure you have Perl installed (www.mssl.ucl.ac.uk/surf/sswdoc/solarsoft/simple\_windows/Install\_Perl.html)
2. make sure you have SolarSoft IDL (SSWIDL) installed (www.lmsal.com/solarsoft/ssw\_install\_howto.html)
3. make sure you have all the necessary packages

*IDL > ssw\_upgrade,/spawn,/binaries,/chianti,/eis,/xrt,/eit,/trace,/secchi,/aia,/mdi,/pfss,/nrl,/cds,/swap,/lasco,/loud,/passive\_ftp*

1. get latest version of FORWARD [*people.hao.ucar.edu/sgibson/FORWARD/TARS*], delete (or make sure not in your path) old versions, and expand new tars (for FORWARD, FORWARD\_DOCS, and FORWARD\_DB). (N.B.: this step must be redone if any of the tar files have a date stamp later than the last one your downloaded)
2. create a working directory FORWARD\_WORKING\_DIR
3. make sure you have the packages pointed to in your SSWIDL startup (probably in ssw/site/setup/sswidl.bat)

*IDL > set SSW\_INSTR=binaries chianti eis xrt eit trace secchi aia mdi pfss nrl cds swap lasco*

1. make sure you have $FORWARD, $FORWARD\_DB, $FORWARD\_DOCS, and $FORWARD\_WORKING\_DIR and IDL\_PATH are all set in ssw\site\setup\setup.ssw\_paths

*setenv FORWARD c:\ssw\_idl\ssw\FORWARD\*

*(editing to make the correct path pointing to the FORWARD\* directories)*

*setenv FORWARD\_DOCS c:\ssw\_idl\ssw\FORWARD\_DOCS\*

*setenv FORWARD\_DB c:\ssw\_idl\ssw\FORWARD\_DB\*

*setenv FORWARD\_WORKING\_DIR [wherever you want to put it] FORWARD\_WORKING\_DIR\*

*setenv IDL\_PATH +${IDL\_DIR}/lib:\+$FORWARD/:\+$FORWARD\_DB/:\+$FORWARD\_DOCS/:\+$FORWARD\_WORKING\_DIR/*

IF YOU DO NOT HAVE A SETUP.SSW\_PATHS - you can download them *http://hesperia.gsfc.nasa.gov/ssw/site/setup/setup.ssw\_paths* and then add the lines above.

1. make sure FORWARD, FORWARD\_DB, FORWARD\_DOCS, and FORWARD\_WORKING\_DIR are all included in IDLDE preferences Window: “Preferences/IDL/Paths”.
2. make sure you have Fortran compiler installed. GFORTRAN is recommended (https://gcc.gnu.org/wiki/GFortranBinaries ). If using g77, from a DOS cmd window run “g77setup” in directory C:\G77
3. if using g77, then edit the makefile in FORWARD/FORCOMP by changing all the "gfortran" into "g77" (there should be two places, after FC and after LINK). (NB: to change disk from the prompt line in the DOS cmd window, type: C:\ > D:) (N.B.: this step must be redone if forcomp.f or any other \*.f codes change in $FORWARD/FORCOMP directory)
4. go to directory $FORWARD/FORCOMP and in a DOC cmd window compile the "forcomp" FORTRAN routine with the following command: "make forcomp". (it also might work to just type: “make”). (N.B.: this step must be redone if forcomp.f or any other \*.f codes change in $FORWARD/FORCOMP directory)
5. copy the executable forcomp.exe to your FORWARD\_WORKING\_DIR (N.B.: this step must be redone if forcomp.f or any other \*.f codes change in $FORWARD/FORCOMP directory).
6. If you do not have the ability to “zip” and “unzip” from the command line in your windows installment, follow instructions to install the "zip" and "unzip" command under Windows able to run from DOS command line. The instructions can be found in the webpage: <http://people.hao.ucar.edu/sgibson/FORWARD/FORWARD_DOCS/INSTRUCTIONS/unzip.html>
7. check in directory “\ssw\vobs\ontology\binaries\Win32\_x86\_64 “ if there are the files “cfitsio.dll” and “cfitsio.lib”. If not, copy them there from directory: “\ssw\vobs\ontology\binaries\Win32\_x86 “. (N.B.: this step must be redone if you upgrade ssw).
8. run the tests below outside of FORWARD (just in a SSWIDL session)
9. run FORWARD in a SSWIDL session by typing

IDL> for\_widget,

;\*\*\*\*\*\*\*

**TESTS** (can be run in SSWIDL session, even when FORWARD not started):

If any of these fail, be sure you have all the packages set up as described in $FORWARD/FORWARD\_DOCS/INSTRUCTIONS/installupdate.html

IDL> aia\_lct,wave=193

(this should set AIA color table, you should not get an error.)

IDL> test=get\_stereo\_lonlat('2010-01-01','A') (this should return spacecraft position)

IDL> use\_network

(this should not give an error - if it does, try ssw\_upgrade,/spawn,/loud,/passive\_ftp

IDL> test=vso\_search('2012-01-01T00:00:00','2012-01-01T00:10:00',instr='aia')

(this should not give an error but acts to query the VSO for data and return information)

IDL> filelocatenew=vso\_get(test[0],filenames=filenames,/rice)

(this should download a file with the name of the file now in filenames)

IDL> read\_sdo,filenames,header,image

IDL> help,header,image

--you should get something like:

|  |  |  |
| --- | --- | --- |
| HEADER | STRUCT | = -> Array[1] |
| IMAGE | INT | = Array[4096, 4096] |