Ice Sheet System Model
Installation

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Preliminary Notes

Operating System Requirements:

- Mac OS X
- LINUX 32/64, UNIX
- Windows XP (via Cygwin or equivalent)
Obtaining ISSM Distribution

Download Instructions:
http://issm.jpl.nasa.gov/installation/download/

- Download and install SVN (Apache Subversion)
- Checkout ISSM:
  $ svn -username anon -password anon checkout https://issm.ess.uci.edu:80/svn/issm/issm
- Update ISSM:
  $ svn update
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Environment Variables

Website:
http://issm.jpl.nasa.gov/installation/installation/

ISSM needs the following Environment Variables to be set:

  - .bashrc
    
    #ISSM
    export ISSM_TIER=ISSMPATH
    export ISSM_ARCH=ARCH
    source $ISSM_TIER/etc/environment.sh

  - .cshrc
    
    #ISSM
    setenv ISSM_TIER ISSMPATH
    setenv ISSM_ARCH ARCH
    source $ISSM_TIER/etc/environment.csh

ISSMPATH is the path of ISSM main directory

  - ex: /home/user1/svn/issm/trunk

ARCH is the system architecture

  - ex: linux-gnu-amd64, macosx-gnu,...
External Packages: Fortran Compiler

A Fortran compiler is required for some of the PETSc packages

- Mac OS X:
  Xcode does **Not** have a Fortran compiler

- Download and install binaries:
  http://gcc.gnu.org/wiki/GFortranBinaries
External Packages

Website:
http://issm.jpl.nasa.gov/installation/installation/

External Packages to Install: Order Matters!
- mpich2 (Installed first)
- petsc (after mpich2)
- metis
- matlab (only a softlink to the actual matlab directory)
- triangle (after matlab)
- autoconf
- automake (after autoconf)

External Packages are located in the trunk folder
(i.e. $ cd $ISSM_TIER/externalpackages/)
External Packages: Installing

Configuring the External Packages:

- Each external package library has a "configs" directory (sometimes multiple versions of the package are available)
- Each "configs" directory has subdirectories with custom configuration files for a variety of machine types/names

Installation Process:

- Copy the files (configure.sh) corresponding to the machine type/name to the external package directory
- Run ./install.sh

For example: Astrid

```
$ cd $ISSM_TIER/externalpackages/mpich2
$ cp configs/astrid/* .
$ ./install.sh
```
Example: PETSc

Tweaking the configure.sh file may be necessary for custom installations:

- configure.sh files for a Mac OS X and an Astrid (Linux) installation:
ISSM Configuration

Generate the makefiles needed to compile ISSM:

- ISSM uses autotools to make the source-code packages portable to many Unix-like systems

- Re-configure ISSM:
  $ cd $ISSM_TIER
  $ ./scripts/automakererun.sh

Configure ISSM for your Operating System

- Run one of the configure.sh files corresponding to your machine type (several have been provided)
- For example: $ ./configs/astrid/configure.sh
Custom ISSM Installation

Other platforms may require the user to write their own configure.sh file
- configure.sh files for a Mac OS X and an Astrid (Linux) ISSM installation:

```
//configure

```

- All of the options available for configuring ISSM can be listed by running `./configure --help`
ISSM Compilation

Compile ISSM:
  • ISSM can now be compiled:
    $ cd $ISSM_TIER
    $ make
    $ make install

ISSM installation is done!

Compiling Troubleshooting:
  • http://issm.jpl.nasa.gov/installation/compilationtroubleshooting/
Thank you!