

XIII.F. CONFIGURATION AND DISTRIBUTION SYSTEM

In 2005, ORNL researcher Dorothea Wiarda created a modern configuration and distribution system for SAMMY. This system makes it significantly easier for a user to install SAMMY on another computer.

SAMMY is distributed as a set of four *.gz files. The primary file, sammy-7.0.0.tar.gz, contains the FORTRAN plus installation commands. To unpack this file, type the command

```
gunzip -c sammy-7.0.0.tar.gz | tar xvf -
```

This command will create a subdirectory named sammy-7.0.0/, which contains a number of command and comment files, plus three subdirectories doc/, obj/, and src/. Subdirectory doc/ contains this document (the SAMMY users' manual) in pdf format. Subdirectory src/ contains 68 subdirectories, each of which hold several FORTRAN files. Subdirectory obj/ contains only two files initially but after compilation holds the object files (compiled version of the FORTRAN files).

Before creating the SAMMY executables, decide where you want to store them; you must have write privileges for that directory. To create the executables, type the following commands (substituting, of course, your chosen location for the directory name):

```
cd sammy-7.0.0
./configure --bindir=/xxx/sammydir --with-array=32500000
make
```

In this example, we have arbitrarily chosen “/xxx/sammydir” to represent the directory name. The absolute path name must be used. The number 32500000 represents one-half of the array size and may need to be modified (increased* or decreased) for your particular installation; see Section XIII.A for more information. If no change is needed in this value, the second line above can be shortened by dropping “--with-array=32500000”.

The “make” command will compile the FORTRAN files and place the results as *.o into the sammy-7.0.0/obj directory. It will also create executable files, placing them in the same directory. After this step is successfully completed, type the command

```
make install ,
```

which copies the executables to subdirectory /xxx/sammydir. The executable files are as follows:

angodf	sam012	samcpr	sammy	samplx	samrpt	samsta
convrt	samamr	samdis	samort	samqua	samsmc	samthn
dopushx	samamx	samftz	samplt	samrml	samsmx	suggel

* The maximum possible value for this number is $2^{31}-1 = 2147483647$ on a 32-bit machine. It is recommended to use smaller values than these unless absolutely necessary. If the number is too big for your compiler, compilation may fail. Alternatively, installation may appear to be complete, but the program will not run. In either case, try a smaller value.

If errors occur during the “make” stage, you will want to first verify that you have properly completed all earlier commands (gunzip ..., cd ..., and ./configure...). If it becomes necessary to contact the author for assistance, you should provide the following information: (1) the config.log file, created during the “configure” step, and (2) the fatal error messages from the “make” command. The latter may be retrieved by repeating the “make” command and sending a screen dump (including system error messages) to a separate file. (On some systems, the command “make >& makelog” will accomplish this task, sending the screen dump to a file named “makelog”.)

In directory sammy-7.0.0 is a file named INSTALL. This file contains complete installation instructions; a portion of this file is printed as Table XIII F.1 below.

Three other *.gz files are included in the SAMMY package. The file samexm-7.0.0.tar.gz contains the tutorial exercises, samtry-7.0.0.tar.gz contains the test cases, and samsim-7.0.0.tar.gz contains the Monte Carlo simulations. To unpack these files, type the commands

```
gunzip -c samexm-7.0.0.tar.gz|tar xvf -
gunzip -c samtry-7.0.0.tar.gz|tar xvf -
gunzip -c samsim-7.0.0.tar.gz|tar xvf -
```

With the first of these commands, a subdirectory samexm-7.0.0/samexm will be created, which contains other subdirectories with the specific exercises. Similarly, samtry-7.0.0/samtry and samsim-7.0.0/samsim subdirectories are created for the test cases and simulations using the second and third commands. The reader is referred to Section XII for details on the use of the tutorial exercises, test cases, and simulations.

Table XIII F.1. Installation instructions for SAMMY, as given in the INSTALL file

```
#####
# Here is the super-short installation guide. Be sure to change "somedir"
# to your directory location. For details or alternatives, read the
# remainder of this file. Additional information is available in
# Section XIII.F of SAMMY users' manual, found in sammy-7.0.0/doc.
#####
gunzip -c samtry-7.0.0.tar.gz|tar xvf -
gunzip -c samexm-7.0.0.tar.gz|tar xvf -
gunzip -c samsim-7.0.0.tar.gz|tar xvf -
gunzip -c sammy-7.0.0.tar.gz|tar xvf -
cd sammy-7.0.0
./configure --bindir=/somedir/sammy/bin
make
make install
#####
```