

## SAC - Version 2.0, August 30, 2012

### Slope-Area Computation Program

For assistance, enhancement requests, or bug reports contact [h2osoft@usgs.gov](mailto:h2osoft@usgs.gov). See the file `sac2\doc\sacman.pdf` for descriptions, references, and additional contacts for this software. Instructions for installation, execution, and testing are provided below.

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#### A. DISTRIBUTION PACKAGES

The distribution package is:

InstallSAC.jar: Installer program that includes the SAC Graphical User Interface (GUI) and SAC executable programs for Windows and Macintosh, source code, sample data, and documentation

#### B. EXTRACTING and INSTALLING FILES

To install the SAC GUI and SAC, download the InstallSAC.jar and double-click it to start the installation process. The default installation location for the Windows operating system is `C:\Program Files\SAC`. The default Mac OS location is `/Applications/SAC`. This location can be changed and the installer will prompt you if it detects a previous installation of SAC or the SAC GUI in the specified location. The installation directory is the root for all paths described below. Mac OS users should replace the Windows path separator ('\\') with the Mac OS path separator ('/') in cases where only a Windows path is supplied.

Note:

It is recommended that no user files be kept in the installation directory structure. If you do plan to put files in the directory structure, do so only by creating subdirectories for your data.

#### C. RUNNING THE SOFTWARE

After the software is properly installed, double-clicking the file SACGUI.jar launches the graphical user interface. SAC can be run from the command line in standalone mode by executing `bin\SAC.exe` (Windows) or `bin/sac` (Mac OS). SAC prompts for type of program input file (currently, only WSPRO formatted data is supported), input file name, output file name, and a run name.

#### D. TESTING

Test data sets are provided to verify that the program is correctly installed and running on the system. The tests may also be looked at as examples of how to use the program. The directory `sac2\test` contains the scripts to run the tests. The directory `sac2\data` contains the input data and expected results for each test. Tests are run in the directory `sac2\test`. Run the tests using one of the following methods:

1. double clicking on `test.bat` (or `test.sh` on Mac OS). This will run all of the tests.

## 2. typing:

```
test [m [n]]
```

where:

m = the number of the first test to perform, default=1

n = the number of the last test to perform, default=5

For example:

command	what happens
test	runs all of the tests
test n	runs test 'n' through the last test
test n m	runs test 'n' through 'm'

After the tests are completed, the results are compared to the expected results. If all goes well, the only differences will be due to different processing times or pathnames. To clean up after the tests, type the command:

```
clean
```

NOTE: the standard data sets were created on a Data General AViiON workstation. You may notice slight numeric differences in the results on other computers. These are generally due to different round-off algorithms and the different architecture of the central processing unit chip.

The tests are described in the table below. Test is the test number, program is the program used to run the test, and the usage column indicates how a file is used, with i for input, o for output, and i/o for both input and output.

test	program	description of test and files	file name & usage
1	sac	slope-area reach example with level-water surface in cross sections SAC input data Program output screen capture of test	example1.dat i example1.out o example1.log o
2	sac	slope-area reach: Snake Creek near Connell, Wash., for flood of February 21, 1956  SAC input data Program output screen capture of test	example2.dat i example2.out o example2.log o
3	sac	sloping water surface with conveyance weighting  SAC input data	example3.dat i

		Program output	example3.out	o
		screen capture of test	example3.log	o
4	sac	Slope-area reach example with level-water surface in cross sections, metric output		
		SAC input data	example4.dat	i
		Program output	example4.out	o
		screen capture of test	example4.log	o
5	sac	Simple reach example with metric input and feet-second output		
		SAC input data	example5.dat	i
		Program output	example5.out	o
		screen capture of test	example5.log	o

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Good Luck!

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