

# 5 Flavors of Stata

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## 5.1 Platforms

Stata is available for a variety of computers, including

- Stata for Windows, 64-bit x86-64

- Stata for Windows, 32-bit x86

- Stata for Mac, 64-bit Intel

- Stata for Linux, 64-bit x86-64

- Stata for Linux, 32-bit x86

- Stata for Solaris, 64-bit SPARC

- Stata for Solaris, 64-bit x86-64

Which version of Stata you run does not matter—Stata is Stata. You instruct Stata in the same way and Stata produces the same results, right down to the random-number generator. Even files can be shared. A dataset created on one computer can be used on any other computer, and the same goes for graphs, programs, or any file Stata uses or produces. Moving files across platforms is simply a matter of copying them; no translation is required.

Some computers, however, are faster than others. Some computers have more memory than others. Computers with more memory, and faster computers, are better.

The list above includes both 64- and 32-bit computers. 64-bit Stata runs faster than 32-bit Stata and 64-bit Stata will allow processing data in excess of 2 gigabytes, assuming you have enough memory. 32-bit Stata will run on 64-bit hardware.

When you purchase Stata, you may install it on any of the above platforms. Stata licenses are not locked to a single operating system.

## 5.2 Stata/MP, Stata/SE, Stata/IC, and Small Stata

Stata is available in four flavors, although perhaps sizes would be a better word. The flavors are, from largest to smallest, Stata/MP, Stata/SE, Stata/IC, and Small Stata.

Stata/MP is the multiprocessor version of Stata. It runs on multiple CPUs or on multiple cores, from 2 to 64. Stata/MP uses however many cores you tell it to use (even one), up to the number of cores for which you are licensed. Stata/MP is the fastest version of Stata. Even so, all the details of parallelization are handled internally and you use Stata/MP just like you use any other flavor of Stata. You can read about how Stata/MP works and see how its speed increases with more cores in the Stata/MP performance report at <http://www.stata.com/statamp/report.pdf>.

Stata/SE is like Stata/MP, but for single CPUs. Stata/SE will run on multiple CPUs or multiple-core computers, but it will use only one CPU or core. SE stands for special edition.

Both Stata/MP and Stata/SE have the same limits and the same capabilities and are intended for those who work with large datasets. You may have up to 32,767 variables with either. Statistical models may have up to 11,000 variables.

Stata/IC is standard Stata. Up to 2,047 variables are allowed. Statistical models may have up to 800 variables.

Stata/MP, Stata/SE, and Stata/IC all allow up to 2,147,583,647 observations, assuming you have enough memory.

Small Stata is intended for students and limited to 99 variables and 1,200 observations.

### 5.2.1 Determining which version you own

Check your License and Activation Key. Included with every copy of Stata is a License and Activation Key that contains codes that you will input during installation. This determines which flavor of Stata you have and for which platform.

Contact us or your distributor if you want to upgrade from one flavor to another. Usually, all you need is an upgraded License and Activation Key with the appropriate codes. All flavors of Stata are on the same DVD.

If you purchased one flavor of Stata and want to use a lesser version, you may. You might want to do this if you had a large computer at work and a smaller one at home. Please remember, however, that you have only one license (or however many licenses you purchased). You may, both legally and ethically, install Stata on both computers and then use one or the other, but you should not use them both simultaneously.

### 5.2.2 Determining which version is installed

If Stata is already installed, you can find out which Stata you are using by entering Stata as you normally do and typing about:

```
. about
Stata/MP 13.0 for Windows (64-bit x86-64)
Revision date
Copyright 1985-2013 StataCorp LP
10-user 32-core Stata network perpetual license:
  Serial number: 5013041234
  Licensed to: Alan R. Riley
              StataCorp
```

## 5.3 Size limits of Stata/MP, SE, IC, and Small Stata

Here are some of the different size limits for Stata/MP, Stata/SE, Stata/IC, and Small Stata. See [\[R\] limits](#) for a longer list.

## Maximum size limits for Stata/MP, Stata/SE, Stata/IC, and Small Stata

	Stata/MP and SE		Stata/IC	Small Stata
Number of observations	limited only by memory		limited only by memory	fixed at 1,200
Number of variables	32,767		2,047	fixed at 99
Width of a dataset	393,192		24,564	800
Maximum # of right-hand-side variables	10,998		798	99
Number of characters in a macro	1,081,511		165,200	13,400
Number of characters in a command	1,081,527		165,216	13,416

Stata/MP and Stata/SE allow more variables, larger models, longer macros, and a longer command line than Stata/IC. The longer command line and macro length are required because of the greater number of variables allowed. Larger models means that Stata/MP and Stata/SE can fit statistical models with more independent variables.

Small Stata is limited. It is intended for student use and often used in undergraduate labs.

## 5.4 Speed comparison of Stata/MP, SE, IC, and Small Stata

We have written a white paper comparing the performance of Stata/MP with Stata/SE; see <http://www.stata.com/statamp/report.pdf>. The white paper includes command-by-command performance measurements.

In summary, on a 2-CPU or dual-core computer, Stata/MP will run commands in 71% of the time required by Stata/SE. There is variation; some commands run in half the time and others are not sped up at all. Statistical estimation commands run in 59% of the time. Numbers quoted are medians. Average performance gains are higher because commands that take longer to execute are generally sped up more.

Stata/MP running on four CPUs runs in 50% (all commands) and 35% (estimation commands) of the time required by Stata/SE. Both numbers are median measures.

Stata/MP supports up to 64 cores.

Stata/IC is slower than Stata/SE, but those differences emerge only when processing datasets that are pushing the limits of Stata/IC. Stata/SE has a larger memory footprint and uses that extra memory for larger look-aside tables to more efficiently process large datasets. The real benefits of the larger tables become apparent only after exceeding the limits of Stata/IC. Stata/SE was designed for processing large datasets.

Small Stata is, by comparison with all the above, slow, but given its limits, no one notices. Small Stata was designed to have a minimal memory footprint, and to achieve that, different logic is sometimes used. For instance, in Stata's `test` command, it must compute the matrix calculation  $\mathbf{RZR}'$  (where  $\mathbf{Z} = (\mathbf{X}'\mathbf{X})^{-1}$ ). Stata/MP, Stata/SE, and Stata/IC make the calculation in a straightforward way, which is to form  $\mathbf{T} = \mathbf{RZ}$  and then calculate  $\mathbf{TR}'$ . This requires temporarily storing the matrix  $\mathbf{T}$ . Small Stata, on the other hand, goes into more complicated code to form the result directly—code that requires temporary storage of only one scalar. This code, in effect, recalculates intermediate results over and over again, and so it is slower.

The differences are all technical and internal. From the user's point of view, Stata/MP, Stata/SE, Stata/IC, and Small Stata work the same way.

## 5.5 Feature comparison of Stata/MP, SE, and IC

The features of all flavors of Stata on all platforms are the same. The differences are in speed and in limits as discussed above. To learn more, type `help stata/mp`, `help stata/se`, `help stata/ic`, or `help small stata`.