17 Ado-files

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17.1 Description

Stata is programmable, and even if you never write a Stata program, Stata's programmability is still important. Many of Stata's features are implemented as Stata programs, and new features are implemented every day, both by StataCorp and by others.

1. You can obtain additions from the *Stata Journal*. You subscribe to the printed journal, but the software additions are available free over the internet.
2. You can obtain additions from the Stata forum, Statalist, where an active group of users advise each other on how to use Stata, and often, in the process, trade programs. Visit the Statalist website, https://www.statalist.org, for instructions on how to participate.
3. The Boston College Statistical Software Components (SSC) Archive is a distributed database making available a large and constantly growing number of Stata programs. You can browse and search the archive, and you can find links to the archive from https://www.stata.com. Importantly, Stata knows how to access the archive and other places, as well. You can search for additions by using Stata's `search, net` command; see [R] **search**. You can immediately install materials you find with `search, net` by using the hyperlinks that will be displayed by `search` in the Results window or by using the `net` command. A specialized command, `ssc`, has several options available to help you find and install the community-contributed commands that are available from this site; see [R] **ssc**.
4. You can write your own additions to Stata.

This chapter is written for people who want to use ado-files. All users should read it. If you later decide you want to write ado-files, see **[U] 18.11 Ado-files**.

17.2 What is an ado-file?

An ado-file defines a Stata command, but not all Stata commands are defined by ado-files.

When you type `summarize` to obtain summary statistics, you are using a command built into Stata.

When you type ci to obtain confidence intervals, you are running an ado-file. The results of using a built-in command or an ado-file are indistinguishable.

An ado-file is a text file that contains a Stata program. When you type a command that Stata does not know, it looks in certain places for an ado-file of that name. If Stata finds it, Stata loads and executes it, so it appears to you as if the ado-command is just another command built into Stata.

We just told you that Stata's ci command is implemented as an ado-file. That means that, somewhere, there is a file named ci.ado.

Ado-files usually come with help files. When you type help ci (or select **Help > Stata command...**, and type ci), Stata looks for ci.sthlp, just as it looks for ci.ado when you use the ci command. A help file is also a text file that tells Stata's help system what to display.

17.3 How can I tell if a command is built in or an ado-file?

You can use the which command to determine whether a file is built in or implemented as an ado-file. For instance, logistic is an ado-file, and here is what happens when you type which logistic:

```
. which logistic
C:\Program Files\Stata19\ado\base\l\logistic.ado
*! version 3.5.4  28feb2017
```

summarize is a built-in command:

```
. which summarize
built-in command:  summarize
```

17.4 How can I look at an ado-file?

When you type which followed by an ado-command, Stata reports where the file is stored:

```
. which logistic
C:\Program Files\Stata19\ado\base\l\logistic.ado
*! version 3.5.4  28feb2017
```

Ado-files are just text files containing the Stata program. You can view them in Stata's Viewer window (or even look at them in your editor or word processor) by typing

```
. type "C:\Program Files\Stata19\ado\base\l\logistic.ado"
*! version 3.5.4  28feb2017
program define logistic, eclass prop(or svyb svyj svyr swml mi bayes) ///
                                 byable(onecall)
        version 6.0, missing
  (output omitted)
end
```

or

```
. viewsource logistic.ado
  (output omitted)
```

The type command displays the contents of a file. The viewsource command searches for a file along the ado-directories and displays the file in the Viewer. You can also look at the corresponding help file in raw form if you wish. If there is a help file, it is stored in the same place as the ado-file:

```
. type "C:\Program Files\Stata19\ado\base\l\logistic.sthlp", asis
{smcl}
{* *! version 1.4.6  23feb2022}{...}
{viewerdialog logistic "dialog logistic"}{...}
```
(*output omitted*)

or

```
. viewsource logistic.sthlp
```
(*output omitted*)

17.5 Where does Stata look for ado-files?

Stata looks for ado-files in six places, which can be categorized in three ways:

I. The official ado-directory:
   1. (BASE), the official directory containing the ado-files shipped with your version of Stata and any updated ado-files that have been made available since then

II. Your personal ado-directories:
   2. (SITE), the directory for ado-files your site might have installed
   3. (PLUS), the directory for ado-files you personally might have installed
   4. (PERSONAL), the directory for ado-files you might have written
   5. (OLDPLACE), the directory where Stata users used to save their personally written ado-files

III. The current directory:
   6. (.), the ado-files you have written just this instant or for just this project

The location of these directories varies from computer to computer, but Stata's sysdir command will tell you where they are on your computer:

```
. sysdir
   STATA:  C:\Program Files\Stata19\
    BASE:  C:\Program Files\Stata19\ado\base\
    SITE:  C:\Program Files\Stata19\ado\site\
    PLUS:  C:\ado\plus\
PERSONAL:  C:\ado\personal\
OLDPLACE:  C:\ado\
```

17.5.1 Where is the official ado-directory?

This is the directory listed as BASE by sysdir:

```
. sysdir
   STATA:  C:\Program Files\Stata19\
    BASE:  C:\Program Files\Stata19\ado\base\
    SITE:  C:\Program Files\Stata19\ado\site\
    PLUS:  C:\ado\plus\
PERSONAL:  C:\ado\personal\
OLDPLACE:  C:\ado\
```

1. BASE contains the ado-files we originally shipped to you and any updates you might have installed since then. You can install updates by using the update command or by selecting **Help > Check for updates**; see [U] 17.8 How do I install official updates?.

17.5.2 Where is my personal ado-directory?

These are the directories listed as PERSONAL, PLUS, SITE, and OLDPLACE by sysdir:

```
. sysdir
   STATA:  C:\Program Files\Stata19\
    BASE:  C:\Program Files\Stata19\ado\base\
    SITE:  C:\Program Files\Stata19\ado\site\
    PLUS:  C:\ado\plus\
PERSONAL:  C:\ado\personal\
OLDPLACE:  C:\ado\
```

1. PERSONAL is for ado-files you have written. Store your private ado-files here; see **[U] 17.7 How do I add my own ado-files?**.
2. PLUS is for ado-files you personally installed but did not write. Such ado-files are usually obtained from the SJ or the SSC Archive, but they are sometimes found in other places, too. You find and install such files by using Stata's net command, or you can select **Help > SJ and community-contributed features**; see **[U] 17.6 How do I install an addition?**.
3. SITE is really the opposite of a personal ado-directory—it is a public directory corresponding to PLUS. If you are on a networked computer, the site administrator can install ado-files here, and all Stata users will then be able to use them just as if they all found and installed them in their PLUS directory for themselves. Site administrators find and install the ado-files just as you would, using Stata's net command, but they specify an option when they install something that tells Stata to write the files into SITE rather than PLUS; see [R] **net**.
4. OLDPLACE is for old-time Stata users. Prior to Stata 6, all "personal" ado-files, whether personally written or just personally installed, were written in the same directory—OLDPLACE. So that the old-time Stata users do not have to go back and rearrange what they have already done, Stata still looks in OLDPLACE.

17.6 How do I install an addition?

Additions come in four types:

1. Community-contributed additions, which you might find in the SJ, etc.
2. Updates to community-contributed additions
   See **[U] 17.9 How do I install updates to community-contributed additions?**.
3. Ado-files you have written
   See **[U] 17.7 How do I add my own ado-files?** If you have an ado-file obtained from the Stata forum or a friend, treat it as belonging to this case.
4. Official updates provided by StataCorp
   See **[U] 17.8 How do I install official updates?**.

Community-contributed additions you might find in the *Stata Journal* (SJ), etc., are obtained over the internet. To access them on the internet,

1. select **Help > SJ and community-contributed features**, and click on one of the links

or

2. type net from https://www.stata.com.

What to do next will be obvious, but, in case it is not, see **[GSM] 19 Updating and extending Stata—internet functionality**, **[GSU] 19 Updating and extending Stata—internet functionality**, or **[GSW] 19 Updating and extending Stata—internet functionality**. Also see **[U] 29 Using the internet to keep up to date**, [R] **net**, and [R] **ado update**.

17.7 How do I add my own ado-files?

You write a Stata program (see **[U] 18 Programming Stata**), store it in a file ending in `.ado`, perhaps write a help file, and copy everything to the directory `sysdir` lists as `PERSONAL`:

```
. sysdir
   STATA:  C:\Program Files\Stata19\
    BASE:  C:\Program Files\Stata19\ado\base\
    SITE:  C:\Program Files\Stata19\ado\site\
    PLUS:  C:\ado\plus\
PERSONAL:  C:\ado\personal\
OLDPLACE:  C:\ado\
```

Here we would copy the files to `C:\ado\personal`.

While you are writing your ado-file, it is sometimes convenient to store the pieces in the current directory. Do that if you wish; you can move them to your personal ado-directory when the program is debugged.

17.8 How do I install official updates?

Updates are available over the internet:

1. select **Help > Check for updates**, and then click on **https://www.stata.com**

or

2. type `update query`.

What to do next should be obvious, but in case it is not, see **[GSM] 19 Updating and extending Stata—internet functionality**, **[GSU] 19 Updating and extending Stata—internet functionality**, or **[GSW] 19 Updating and extending Stata—internet functionality**. Also see **[U] 29 Using the internet to keep up to date** and [R] **net**.

The official updates include bug fixes and new features but do not change the syntax of an existing command or change the way Stata works.

Once you have installed the updates, you can enter Stata and type `help whatsnew` (or select **Help > What's new?**) to learn about what has changed.

17.9 How do I install updates to community-contributed additions?

If you have previously installed community-contributed additions, you can check for updates to them by typing `adoupdate`. If updates are available, you can install them by typing `ado update, update`. See [R] **ado update**.

17.10 References

Cox, N. J. 2006. Stata tip 30: May the source be with you. *Stata Journal* 6: 149–150.

Wiggins, V. L. 2018. How to automate common tasks. *The Stata Blog: Not Elsewhere Classified*. https://blog.stata.com/2018/10/09/how-to-automate-common-tasks/.

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