

*set iter* — Control iteration settings

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## Description

`set iterlog` and `set maxiter` control the display of the iteration log and the maximum number of iterations, respectively, for estimation commands that iterate and for the Mata optimization functions `moptimize()`, `optimize()`, and `solvenl()`.

`set iterlog` specifies whether to display the iteration log. The default setting is `on`, which displays the log. You can specify `set iterlog off` to suppress it. To change whether the iteration log is displayed for a particular estimation command, you need not reset `iterlog`; you can specify the `log` or `nolog` option with that command. If you do not specify `log` or `nolog`, the `iterlog` setting is used. To view the current setting of `iterlog`, type `display c(iterlog)`.

`set maxiter` specifies the default maximum number of iterations. To change the maximum number of iterations performed by a particular estimation command, you need not reset `maxiter`; you can specify the `iterate(#)` option with that command. If you do not specify `iterate(#)`, the `maxiter` value is used. To view the current setting of `maxiter`, type `display c(maxiter)`.

## Syntax

*Set whether to display the iteration log*

```
set iterlog { on|off } [ , permanently ]
```

*Set default maximum iterations*

```
set maxiter # [ , permanently ]
```

`#` is any number between 0 and 16,000; the initial value is set to 300.

## Option

`permanently` specifies that, in addition to making the change right now, the setting be remembered and become the default setting when you invoke Stata.

## Remarks and examples

[stata.com](#)

The `iterlog` setting is particularly useful in combination with the `nolog` and `log` options; see [example 1](#) below. Also see [\[R\] Maximize](#) for details about the options. The `iterlog` setting has no effect on commands that suppress the iteration log by default, for example, commands prefixed with `svy`. To display the log with those commands, you need to use the `log` option.

You will rarely need to modify the `maxiter` setting to change the maximum number of iterations used by Stata's iterative commands. Instead, you may want to specify the `iterate()` option with these commands. For example, specifying `iterate(0)` is useful for viewing results evaluated at the initial value of the coefficient vector.

The `iterlog` and `maxiter` settings also control the default output displayed by the Mata optimization functions `moptimize()`, `optimize()`, and `solvenl()`.

➤ Example 1: Display and suppress the iteration log

Stata estimation commands that iterate usually display the iteration log by default:

```
. sysuse auto
(1978 automobile data)

. logit foreign mpg
Iteration 0:  Log likelihood =  -45.03321
Iteration 1:  Log likelihood = -39.380959
Iteration 2:  Log likelihood = -39.288802
Iteration 3:  Log likelihood = -39.28864
Iteration 4:  Log likelihood = -39.28864

Logistic regression
Log likelihood = -39.28864
Number of obs =      74
LR chi2(1)     =    11.49
Prob > chi2    =    0.0007
Pseudo R2     =    0.1276
```

foreign	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
mpg	.1597621	.0525876	3.04	0.002	.0566922	.262832
_cons	-4.378866	1.211295	-3.62	0.000	-6.752961	-2.004771

You can suppress the log by specifying the `nolog` option:

```
. logit foreign mpg, nolog
Logistic regression
Log likelihood = -39.28864
Number of obs =      74
LR chi2(1)     =    11.49
Prob > chi2    =    0.0007
Pseudo R2     =    0.1276
```

foreign	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
mpg	.1597621	.0525876	3.04	0.002	.0566922	.262832
_cons	-4.378866	1.211295	-3.62	0.000	-6.752961	-2.004771

If you want to suppress the iteration log from all estimation commands every time they are run within the current Stata session, type

```
. set iterlog off
```

We can run `logit` again but now without the `nolog` option, and the iteration log will not be displayed:

```
. logit foreign mpg
Logistic regression
Log likelihood = -39.28864
Number of obs =      74
LR chi2(1)     =    11.49
Prob > chi2    =    0.0007
Pseudo R2     =    0.1276
```

foreign	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
mpg	.1597621	.0525876	3.04	0.002	.0566922	.262832
_cons	-4.378866	1.211295	-3.62	0.000	-6.752961	-2.004771

Or we can run a different command, for example, `mlogit`, and the log will still be suppressed:

```
. mlogit rep78 mpg
```

Multinomial logistic regression

Number of obs = 69

LR chi2(4) = 15.88

Prob > chi2 = 0.0032

Pseudo R2 = 0.0847

Log likelihood = -85.752375

rep78	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
1						
mpg	.0708122	.1471461	0.48	0.630	-.2175888	.3592132
_cons	-4.137144	3.15707	-1.31	0.190	-10.32489	2.0506
2						
mpg	-.0164251	.0926724	-0.18	0.859	-.1980597	.1652096
_cons	-1.005118	1.822129	-0.55	0.581	-4.576426	2.56619
3	(base outcome)					
4						
mpg	.0958626	.0633329	1.51	0.130	-.0282676	.2199927
_cons	-2.474187	1.341131	-1.84	0.065	-5.102756	.1543813
5						
mpg	.2477469	.0764076	3.24	0.001	.0979908	.397503
_cons	-6.653164	1.841794	-3.61	0.000	-10.26301	-3.043314

With the `iterlog` setting off, we can display the iteration log for specific commands by specifying the `log` option:

```
. mlogit rep78 mpg, log
Iteration 0:  Log likelihood = -93.692061
Iteration 1:  Log likelihood = -86.581485
Iteration 2:  Log likelihood = -85.767758
Iteration 3:  Log likelihood = -85.752385
Iteration 4:  Log likelihood = -85.752375
Iteration 5:  Log likelihood = -85.752375

Multinomial logistic regression
Log likelihood = -85.752375
Number of obs =      69
LR chi2(4)      =    15.88
Prob > chi2     =    0.0032
Pseudo R2      =    0.0847
```

rep78	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
1						
mpg	.0708122	.1471461	0.48	0.630	-.2175888	.3592132
_cons	-4.137144	3.15707	-1.31	0.190	-10.32489	2.0506
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3	(base outcome)					
4						
mpg	.0958626	.0633329	1.51	0.130	-.0282676	.2199927
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mpg	.2477469	.0764076	3.24	0.001	.0979908	.397503
_cons	-6.653164	1.841794	-3.61	0.000	-10.26301	-3.043314

You can switch back to displaying iteration logs by typing

```
. set iterlog on
```

The default setting will be restored automatically the next time you invoke Stata. If you want the setting to be remembered for future Stata sessions, specify the `permanently` option with `set iterlog`.



Also see

- [R] **Maximize** — Details of iterative maximization
- [R] **set** — Overview of system parameters
- [M-5] **moptimize()** — Model optimization
- [M-5] **optimize()** — Function optimization
- [M-5] **solvenl()** — Solve systems of nonlinear equations

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