### 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

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:

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

|        | Coef.     | Std. Err. |     z  |   P>|z|  |      [95% Conf. Interval]      |
|--------|-----------|-----------|--------|-------|--------------------------------|
|  foreign |          |           |        |       |                                |
|  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:

```stata
. logit foreign mpg, nolog
```

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

|        | Coef.     | Std. Err. |     z  |   P>|z|  |      [95% Conf. Interval]      |
|--------|-----------|-----------|--------|-------|--------------------------------|
|  foreign |          |           |        |       |                                |
|  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

```stata
. set iterlog off
```

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

```stata
. logit foreign mpg
```

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

|        | Coef.     | Std. Err. |     z  |   P>|z|  |      [95% Conf. Interval]      |
|--------|-----------|-----------|--------|-------|--------------------------------|
|  foreign |          |           |        |       |                                |
|  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:

```plaintext
set iter — Control iteration settings

. mlogit rep78 mpg

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

rep78

| Coef. | Std. Err. | z   | P>|z| | [95% Conf. Interval] |
|-------|-----------|-----|------|----------------------|
| 1     |           |     |      |                      |
| mpg   | 0.0708122 | 0.1471461 | 0.48 | 0.630 | -0.2175888 - 0.3592132 |
| _cons | -4.137144 | 3.15707 | -1.31 | 0.190 | -10.32489 - 2.0506 |
| 2     |           |     |      |                      |
| mpg   | -0.0164251 | 0.0926724 | -0.18 | 0.859 | -0.1980597 - 0.1652096 |
| _cons | -1.005118 | 1.822129 | -0.55 | 0.581 | -4.576426 - 2.56619 |
| 3     |           |     |      |                      |
|       | (base outcome) | | | | |
| 4     |           |     |      |                      |
| mpg   | 0.0958626 | 0.0633329 | 1.51 | 0.130 | -0.0282676 - 0.2199927 |
| _cons | -2.474187 | 1.341131 | -1.84 | 0.065 | -5.102756 - 0.1543813 |
| 5     |           |     |      |                      |
| mpg   | 0.2477469 | 0.0764076 | 3.24 | 0.001 | -0.0979908 - 0.397503 |
| _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
Number of obs = 69
LR chi2(4) = 15.88
Prob > chi2 = 0.0032
Log likelihood = -85.752375
Pseudo R2 = 0.0847

rep78 | Coef.   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
(1) (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   .3975030
     _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