linestyle — Choices for overall look of lines

## Syntax

### Syntax

<table>
<thead>
<tr>
<th>linestyle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>foreground</td>
<td>borders, axes, etc., in foreground color</td>
</tr>
<tr>
<td>grid</td>
<td>grid lines</td>
</tr>
<tr>
<td>minor_grid</td>
<td>a lesser grid line or same as grid</td>
</tr>
<tr>
<td>major_grid</td>
<td>a bolder grid line or same as grid</td>
</tr>
<tr>
<td>refline</td>
<td>reference lines</td>
</tr>
<tr>
<td>yxline</td>
<td>yline() or xline()</td>
</tr>
<tr>
<td>none</td>
<td>nonexistent line</td>
</tr>
<tr>
<td>p1–p15</td>
<td>used by first–fifteenth “line” plot</td>
</tr>
<tr>
<td>p1bar–p15bar</td>
<td>used by first–fifteenth “bar” plot</td>
</tr>
<tr>
<td>p1box–p15box</td>
<td>used by first–fifteenth “box” plot</td>
</tr>
<tr>
<td>p1area–p15area</td>
<td>used by first–fifteenth “area” plot</td>
</tr>
<tr>
<td>p1solid–p15solid</td>
<td>same as p1–p15 but always solid</td>
</tr>
<tr>
<td>p1mark–p15mark</td>
<td>markers for first–fifteenth plot</td>
</tr>
<tr>
<td>p1boxmark–p15boxmark</td>
<td>markers for outside values of box plots</td>
</tr>
<tr>
<td>p1dotmark–p15dotmark</td>
<td>markers for dot plots</td>
</tr>
<tr>
<td>p1other–p15other</td>
<td>“other” lines, such as spikes and range plots</td>
</tr>
</tbody>
</table>

Other *linestyles* may be available; type

```
    . graph query linestyle
```

to obtain the full list installed on your computer.

## Description

*linestyle* sets the overall pattern, thickness, and color of a line; see [G-4] concept: lines for more information.

*linestyle* is specified via options named

\[
\langle \text{object}\rangle \langle \text{l or li or line}\rangle \text{style()} \
\]

or

\[
\langle \text{l or li or line}\rangle \text{style()} \
\]

For instance, for connecting lines (the lines used to connect points in a plot) used by *graph twoway function*, the option is named *lstyle()*:

```
    . twoway function ..., lstyle(linestyle) ...
```
linestyle — Choices for overall look of lines

Sometimes you will see that a linestylelist is allowed:

```
twoway line ..., lstyle(linestylelist) ...
```

A linestylelist is a sequence of linestyles separated by spaces. Shorthands are allowed to make specifying the list easier; see [G-4] stylelists.

Remarks and examples

Remarks are presented under the following headings:

- What is a line?
- What is a linestyle?
- You do not need to specify a linestyle
- Specifying a linestyle can be convenient
- What are numbered styles?
- Suppressing lines

What is a line?

Nearly everything that appears on a graph is a line, the exceptions being markers, fill areas, bars, and the like, and even they are outlined or bordered by a line.

What is a linestyle?

Lines are defined by three attributes:

1. linepattern—whether it is solid, dashed, etc.;
   see [G-4] linepatternstyle

2. linewidth—how thick the line is;
   see [G-4] linewidthstyle

3. linecolor—the color of the line;
   see [G-4] colorstyle

The linestyle specifies all three of these attributes.

You do not need to specify a linestyle

The linestyle is specified in options named

```
⟨object⟩⟨l or li or line⟩style(linestyle)
```

Correspondingly, three other options are available:

```
⟨object⟩⟨l or li or line⟩pattern(linepatternstyle)
⟨object⟩⟨l or li or line⟩width(linewidthstyle)
⟨object⟩⟨l or li or line⟩color(colorstyle)
```

Often the ⟨object⟩ prefix is not required.

You specify the linestyle when a style exists that is exactly what you want or when another style would allow you to specify fewer changes to obtain what you want.
Specifying a linestyle can be convenient

Consider the command

```
    . line y1 y2 x
```

Assume that you wanted the line for y2 versus x to be the same as y1 versus x. You might set the pattern, width, and color of the line for y1 versus x and then set the pattern, width, and color of the line for y2 versus x to be the same. It would be easier, however, to type

```
    . line y1 y2 x, lstyle(p1 p1)
```

`lstyle()` is the option that specifies the style of connected lines. When you do not specify the `lstyle()` option, results are the same as if you specified

```
```

where the extra elements are ignored. In any case, p1 is one set of pattern, thickness, and color values; p2 is another set; and so on.

Say that you wanted y2 versus x to look like y1 versus x, except that you wanted the line to be green; you could type

```
    . line y1 y2 x, lstyle(p1 p1) lcolor(. green)
```

There is nothing special about the *linestyles* p1, p2, ...; they merely specify sets of pattern, thickness, and color values, just like any other named *linestyle*. Type

```
    . graph query linestyle
```

to find out what other line styles are available. You may find something pleasing, and if so, that is more easily specified than each of the individual options to modify the individual elements.

Also see *Appendix: Styles and composite styles* in [G-2] *graph twoway scatter* for more information.

What are numbered styles?

p1–p15 are the default styles for connecting lines in all *twoway* graphs, for example, *twoway line*, *twoway connected*, and *twoway function*. p1 is used for the first plot, p2 for the second, and so on. Some *twoway* graphs do not have connecting lines.

p1bar–p15bar are the default styles used for outlining the bars on bar charts; this includes *twoway bar* charts and *bar charts*. p1bar is used for the first set of bars, p2bar for the second, and so on.

p1box–p15box are the default styles used for outlining the boxes on *box charts*. p1box is used for the first set of boxes, p2box for the second, and so on.

p1area–p15area are the default styles used for outlining the areas on area charts; this includes *twoway area* charts and *twoway rarea*. p1area is used for the first filled area, p2area for the second, and so on.

p1solid–p15solid are the same as p1–p15, but the lines are always solid; they have the same color and same thickness as p1–p15.

p1mark–p15mark are the default styles for lines used to draw markers in all *twoway* graphs, for example, *twoway scatter*, *twoway connected*, and *twoway rcapsym*. p1mark is used for the first plot, p2mark for the second, and so on.

The *linepatternstyle* attribute is always ignored when drawing symbols.

p1boxmark–p15boxmark are the default styles for drawing the markers for the outside values on *box charts*. p1box is used for the first set of dots, p2box for the second, and so on.
p1dotmark–p15dotmark are the default styles for drawing the markers on dot charts. p1dot is used for the first set of dots, p2dot for the second, and so on.

p1other–p15other are the default styles used for “other” lines for some twoway plottypes, including the spikes for twoway spike and twoway rspike and the lines for twoway dropline, twoway rcap, and twoway rcapsym. p1other is used for the first set of lines, p2other for the second, and so on.

The “look” defined by a numbered style, such as p1, p1mark, p1bar, etc.—by “look” we mean width (see [G-4] linewidthstyle), color (see [G-4] colorstyle), and pattern (see [G-4] linepatternstyle)—is determined by the scheme (see [G-4] schemes intro) selected.

Numbered styles provide default looks that can be controlled by a scheme. They can also be useful when you wish to make, say, the second “thing” on a graph look like the first. See Specifying a linestyle can be convenient above for an example.

Suppressing lines

Sometimes you want to suppress lines. For instance, you might want to remove the border around the plot region. There are two ways to do this: You can specify

\(<object>\langle l \text{ or } li \text{ or } line \rangle style(none)\)

or

\(<object>\langle l \text{ or } li \text{ or } line \rangle color(\text{color})\)

The first usually works well; see Suppressing the axes in [G-3] axis_scale_options for an example.

For the outlines of solid objects, however, remember that lines have a thickness. Removing the outline by setting its line style to none sometimes makes the resulting object seem too small, especially when the object was small to begin with. In those cases, specify

\(<object>\langle l \text{ or } li \text{ or } line \rangle color(\text{color})\)

and set the outline color to be the same as the interior color.

Reference


Also see

[G-4] concept: lines — Using lines
[G-4] colorstyle — Choices for color
[G-4] connectstyle — Choices for how points are connected
[G-4] linepatternstyle — Choices for whether lines are solid, dashed, etc.
[G-4] linewidthstyle — Choices for thickness of lines