**Description**

`yline()`, `xline()`, and `tline()` are used with `twoway` to add lines to the plot region. `tline()` is an extension to `xline()`; see [TS] `tsline` for examples using `tline()`.

**Quick start**

Add a horizontal line at the value 0

```
  graph_command ..., ... yline(0)
```

Add horizontal lines at the values of 9, 11, and 17

```
  graph_command ..., ... yline(9 11 17)
```

Add a vertical line at the value of 17.2

```
  graph_command ..., ... xline(17.2)
```

As above, but add a thin red line

```
  graph_command ..., ... xline(17.2, lwidth(thin) lcolor(red))
```

As above, but specify line width as 1 point

```
  graph_command ..., ... xline(17.2, lwidth(1pt) lcolor(red))
```

Add a vertical line on June 29, 2016

```
  graph_command ..., ... tline(29jun2016)
```

Add a red vertical line at 10 and a blue one at 20

```
  graph_command ..., ... xline(10, lcolor(red)) xline(20, lcolor(blue))
```
**Syntax**

<table>
<thead>
<tr>
<th>added_line_options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>yline(linearg)</td>
<td>add horizontal lines at specified ( y ) values</td>
</tr>
<tr>
<td>xline(linearg)</td>
<td>add vertical lines at specified ( x ) values</td>
</tr>
<tr>
<td>tline(time_linearg)</td>
<td>add vertical lines at specified ( t ) values</td>
</tr>
</tbody>
</table>

\( yline(), xline(), \) and \( tline() \) are *merged-implicit*; see \[G-4\] Concept: repeated options and see Interpretation of repeated options below.

where \( linearg \) is

\[
\text{numlist} \ [, \ suboptions]
\]

For a description of \( \text{numlist} \), see \[U\] 11.1.8 numlist.

and where \( time\_linearg \) is

\[
\text{datelist} \ [, \ suboptions]
\]

For a description of \( \text{datelist} \), see \[U\] 11.1.9 datelist.

**Suboptions**

<table>
<thead>
<tr>
<th>suboptions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>axis(#)</td>
<td>which axis to use, ( 1 \leq # \leq 9 )</td>
</tr>
<tr>
<td>style(addedlinestyle)</td>
<td>overall style of added line</td>
</tr>
<tr>
<td>( \text{no extend} )</td>
<td>extend line through plot region’s margins</td>
</tr>
<tr>
<td>lstyle(linestyle)</td>
<td>overall style of line</td>
</tr>
<tr>
<td>lpattern(linepatternstyle)</td>
<td>line pattern (solid, dashed, etc.)</td>
</tr>
<tr>
<td>lwidth(linewidthstyle)</td>
<td>thickness of line</td>
</tr>
<tr>
<td>lalign(linealignmentstyle)</td>
<td>outline alignment (inside, outside, center)</td>
</tr>
<tr>
<td>lcolor(colorstyle)</td>
<td>color and opacity of line</td>
</tr>
</tbody>
</table>

**Options**

\( yline(linearg), xline(linearg), \) and \( tline(time\_linearg) \) specify the \( y, \) \( x, \) and \( t \) (time) values where lines should be added to the plot.

**Suboptions**

\( \text{axis(#)} \) is for use only when multiple \( y, x, \) or \( t \) axes are being used (see \[G-3\] axis_choice_options). \( \text{axis()} \) specifies to which axis the \( yline(), xline(), \) or \( tline() \) is to be applied.

\( \text{style(addedlinestyle)} \) specifies the overall style of the added line, which includes \( \text{no extend} \) and \( \text{lstyle(linestyle)} \) documented below. See \[G-4\] addedlinestyle. The \( \text{no extend} \) and \( \text{lstyle()} \) options allow you to change the added line’s attributes individually, but \( \text{style()} \) is the starting point.
You need not specify \texttt{style()} just because there is something that you want to change, and in fact, most people seldom specify the \texttt{style()} option. You specify \texttt{style()} when another style exists that is exactly what you desire or when another style would allow you to specify fewer changes to obtain what you want.

\texttt{extend} and \texttt{noextend} specify whether the line should extend through the plot region’s margin and touch the axis; see \texttt{[G-3 region_options]}. Usually \texttt{noextend} is the default, and \texttt{extend} is the option, but that is determined by the overall \texttt{style()} and, of course, the scheme; see \texttt{[G-4 Schemes intro]}

\texttt{lstyle(linestyle), lpattern(linepatternstyle), lwidth(linewidthstyle), lalign(linealignmentstyle), and lcolor(colorstyle)} specify the look of the line; see \texttt{[G-2 graph twoway line]}. \texttt{lstyle()} can be of particular use:

To create a line with the same look as the lines used to draw axes, specify \texttt{lstyle(foreground)}.

To create a line with the same look as the lines used to draw grid lines, specify \texttt{lstyle(grid)}.

\subsection*{Remarks and examples}

\texttt{yline()} and \texttt{xline()} add lines where specified. If, however, your interest is in obtaining grid lines, see the \texttt{grid} option in \texttt{[G-3 axis_label_options]}

Remarks are presented under the following headings:

\begin{itemize}
\item Typical use
\item Interpretation of repeated options
\end{itemize}

\subsubsection*{Typical use}
\texttt{yline()} or \texttt{xline()} are typically used to add reference values:

\begin{verbatim}
. scatter yvar xvar, yline(10)
. scatter yvar year, xline(1944 1989)
\end{verbatim}

To give the line in the first example the same look as used to draw an axis, we could specify

\begin{verbatim}
. scatter yvar xvar, yline(10, lstyle(foreground))
\end{verbatim}

If we wanted to give the lines used in the second example the same look as used to draw grids, we could specify

\begin{verbatim}
. scatter yvar year, xline(1944 1989, lstyle(grid))
\end{verbatim}

\subsubsection*{Interpretation of repeated options}
Options \texttt{yline()} and \texttt{xline()} may be repeated, and each is executed separately. Thus different styles can be used for different lines on the same graph:

\begin{verbatim}
. scatter yvar year, xline(1944) xline(1989, lwidth(3))
\end{verbatim}

\section*{Reference}
Also see

[G-4] `addedlinestyle` — Choices for overall look of added lines

[G-4] `colorstyle` — Choices for color

[G-4] `linealignmentstyle` — Choices for whether outlines are inside, outside, or centered

[G-4] `linepatternstyle` — Choices for whether lines are solid, dashed, etc.

[G-4] `linestyle` — Choices for overall look of lines

[G-4] `linewidthstyle` — Choices for thickness of lines