
Progress Indicators

User Experience: Controls



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Introduction to Progress Indicators

A progress indicator shows that a lengthy task is under way. It can either be determinate and display how much of the task is done, or it can be indeterminate and display only that the application is busy.

Organization of This Document

This topic describes how to use a progress indicator. [“About Progress Indicators”](#) (page 7) gives basic information on progress indicators. [“Using Indeterminate Progress Indicators”](#) (page 11) and [“Using Determinate Progress Indicators”](#) (page 9) describe how to use the different types of indicators.

About Progress Indicators

A progress indicator shows that a lengthy task is under way. Some progress indicators do nothing more than spin to show that the application is busy, while others show the percentage of the task that has been completed. `NSProgressIndicator` provides both types of display:

- An indeterminate progress indicator (the “barber pole”) that spins until the task is complete, like this:



- A determinate progress indicator that draws a three-dimensional progress bar from left to right in the view as the task progresses, like this:



`NSProgressIndicator` is a subclass of `NSView`. To display a progress indicator, your application creates a window and adds the progress indicator as a subview of the window’s content view or any subview. You can create a progress indicator programmatically either with its Java constructor or initialize it with the Objective-C `initWithFrame:` method. However, you normally use Interface Builder to create and initialize a progress indicator and to install it in an application view.

You can display progress indicators of different sizes by varying the frame size. However, the default size is designed to provide the best results.

By default, a progress indicator is drawn with a beveled frame, but you can use the `setBeveled:` method to modify the beveled-frame setting.

Using Determinate Progress Indicators

By default, a progress indicator is indeterminate. You can specify a determinate progress indicator when you set up the view with Interface Builder, or you can use code like the following example to change the default value programmatically:

```
[myProgressIndicatorView setIndeterminate:FALSE];
```

For a determinate progress indicator, invoke the `incrementBy:` method to advance the progress bar. By default, a determinate progress indicator goes from 0.0 to 100.0. You can increment by any amount, but if you vary the increment too widely, progress may appear uneven or jerky. You typically choose an increment value that evenly divides 100.0. For example, you might invoke `incrementBy: 50` times, incrementing by 2.0 each time, to draw the complete progress bar. To set the value directly, use `setDoubleValue:`. To modify the default range of 0.0 to 100.0, you can invoke `setMinValue:` to modify the minimum value and `setMaxValue:` to modify the maximum value.

After each invocation of `incrementBy:`, you can invoke the `displayIfNeeded` method to ensure immediate redrawing.

Using Indeterminate Progress Indicators

For an indeterminate progress indicator, invoke `startAnimation:` to start the animation (the spinning of the barber pole) and `stopAnimation:` when the task is complete. By default, the delay between animation steps is one twelfth of a second (5/60). You can change the animation delay by invoking `setAnimationDelay:`. Setting the delay to a double value larger than the default value will slow the animation, while setting the delay to a smaller value will speed it up.

Instead of invoking `startAnimation:` and `stopAnimation:`, you can control an indeterminate progress indicator directly by sending the `animate:` message. Each time you invoke `animate:`, the animation advances by one step. You can speed up or slow down the animation by varying how often you invoke `animate:`. Like other views, a progress indicator redisplay itself on each pass through the event loop, if needed. To ensure immediate redrawing, however, you can invoke the `displayIfNeeded` method (inherited from `NSView`) each time you invoke `animate:`.

If your application is threaded, you may want the progress indicator's animation to happen in a separate thread by calling `setUsesThreadedAnimation:`. If your application doesn't already use threads, creating a thread just for the progress indicator can actually slow down your application.

By default, a progress indicator is indeterminate.

Document Revision History

This table describes the changes to *Progress Indicators*.

Date	Notes
2002-11-12	Revision history was added to existing topic. It will be used to record changes to the content of the topic.

