



# Dashboard

Instant access to widgets.

## Features

### Track information right from your desktop

- Standard suite of widgets, including Weather, Flight Tracker, Stocks, Dictionary, Phone Book, and more
- Instant access with the click of an icon
- Dazzling Exposé-like animation
- High performance and reliability
- Hide, show, add, and rearrange widgets to suit your needs
- Open multiple instances of a widget
- Clickable links that integrate widgets with applications and the Internet
- Customizable widget preferences
- Automatic installation when downloading widgets using Safari

### Create your own widgets

- Develop widgets using industry-standard web technologies—HTML, JavaScript, and CSS
- Create a widget using only a text editor and browser, such as TextEdit and Safari; no installer code required
- Use Internet (Safari) plug-ins
- Create custom plug-ins to access sophisticated Tiger technologies including Quartz, QuickTime, Core Audio, and Core Image
- Execute UNIX commands, UNIX scripts, and AppleScript scripts; open applications and other widgets from within a widget
- Incorporate popular web security technologies, including SHTML, SHTTP, SSL, and cookies

Dashboard offers a dazzling way to quickly access a new class of convenient, lightweight applications called widgets. Just click the icon, and widgets such as a calculator, a clock, or a stock ticker appear instantly on your screen. With another click, they vanish just as quickly.

To get you started, Apple includes a variety of widgets in Mac OS X version 10.4 “Tiger” that will help you follow stocks, check the weather, track a flight, translate a phrase, look up words, find an address, and much more. You can arrange your widgets in Dashboard any way you like, and you can add more widgets to your collection.

Dashboard is also a platform for development. It is based on the popular industry-standard technologies HTML, JavaScript, and Cascading Style Sheets (CSS). So, if you have the knack for building web pages or can do a little programming, you can create your own widget.



Dashboard widgets float gracefully above the desktop and provide convenient access to important tools and information.

## Widgets in Tiger

Mac OS X Tiger is packed with preinstalled widgets for you to explore and enjoy. Some widgets perform a simple function, such as the Calculator, Unit Converter, and Calendar widgets. Others provide information from the Internet, such as the Stocks, Weather, Phone Book, Flight Tracker, and Translation widgets. The following descriptions give you a quick look at the standard Tiger widgets and their functions. You can learn to use each of them in just a few minutes.



### Stocks

Use the Stocks widget to track the changes in your favorite stock funds. The widget displays the ticker symbol, current price (with up to 20-minute delay), and daily change for each of the stocks you choose, both international and domestic. To see a stock's recent performance, click its ticker symbol to view a graph of its price history. On the reverse side of the widget, a ticker symbol lookup helps you find and track additional stocks.



### Weather

Use the Weather widget to view current weather conditions for cities around the world. A beautifully rendered image displays the city name and weather at a glance along with the weather conditions, including the current temperature and expected high and low. Clicking anywhere on the widget reveals a 6-day high/low forecast complete with weather icons. For weather information in a different location, edit the widget and enter a zip code.



### Phone Book

Use the Phone Book widget to find contact information for just about any company in the United States. This widget provides fast, easy access to an online business directory. Search by name or category to display the phone number and address for publicly listed businesses near you. Click the telephone number to display it in ultra-large print so you can read it easily while dialing the phone, and click an address to see a map of the company's location.



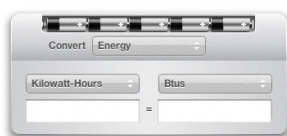
### Flight Tracker

Use Flight Tracker to follow upcoming flights and flights in progress. Type in or select an airline, flight number, and destination or departure city to view the flight schedule information. A map displays the approximate location for flights in progress in the United States and Canada.



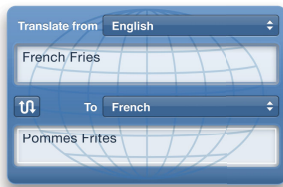
### Dictionary

Quickly find the definition of a word using the Dictionary widget. You can type all or part of the word, and a list of matching words in the dictionary is displayed. You can click to select a word or continue typing until you find the word you're looking for. The definition is beautifully rendered, just as you'd find it in a printed dictionary. You can also view the word in the thesaurus to find synonyms, antonyms, and more. The dictionary and thesaurus are built into Mac OS X Tiger, so no Internet connection is required.



### Unit Converter

Unit Converter quickly converts numerous weights, measures, and currencies. You can convert area, currency, energy, length, mass, power, pressure, speed, temperature, volume, and weight.



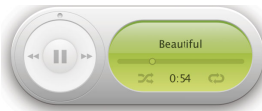
### Translation

Translate words and phrases instantly and effortlessly between languages, including English, Chinese, Dutch, French, German, Greek, Italian, Japanese, Korean, Portuguese, and Russian. Just select the original and intended languages from the pop-up lists and type the word or phrase to be translated. As you type, Translation immediately displays the corresponding word or phrase in the specified language.



### World Clock

Keep track of local time in various cities around the world with World Clock. You can display multiple instances of the widget, each showing the local time in a different city. The clock's background changes from white to black to indicate day and night.



### iTunes

The iTunes widget is a simple controller for playing music in your iTunes music library. You can play, pause, and skip forward and backward through your favorite playlist or Internet radio station and control the music volume by dragging the circular dial.



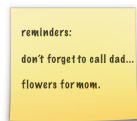
### Calendar

Use the Calendar widget to quickly view the day and date for any month in any year.



### Address Book

Quickly locate contact information in your Address Book using the Address Book widget. You can browse contacts sequentially or type a few characters of a name, address, or phone number to find an entry. Click the red button to open the Address Book application to the same contact to edit, print, create labels, and more.



### Stickies

Take a quick note or jot a reminder using Stickies. You can open any number of sticky notes and edit them to change the page color, text font, and text size.



### Calculator

Perform basic calculations quickly and easily. The Calculator widget handles addition, subtraction, multiplication, and division and includes a memory function.



### Tile Game

This widget scrambles your favorite photo, challenging you to put it back together again. Click the photo to scramble it, then click a tile to move it to the open space and reassemble the photo. Drag a photo onto Tile Game to create a new puzzle.



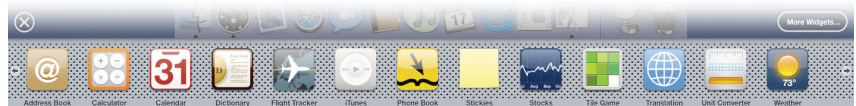
Activate Dashboard by clicking its icon in the Dock.

## Activating Dashboard

Activating Dashboard is as simple as clicking its icon in the Dock or pressing the F12 key. Your personal collection of widgets flies onscreen using a stunning animation and floats above a dimmed desktop. Dashboard uses the entire screen, but it doesn't hide or move your open files, windows, and applications. When you're finished using Dashboard, you can return to your work in an instant, just as you left it.

## Customizing Dashboard

One of the most exciting aspects of Dashboard is that you can configure it any way you like. You can add widgets, hide widgets, and drag widgets to position them anywhere you want them to appear on the screen. Customizing Dashboard is fun and easy. A button in the lower-left corner of Dashboard reveals the Widget Bar hidden beneath the Mac desktop and allows you to reconfigure Dashboard. The Widget Bar displays an icon for each widget installed on the computer. You click or drag an icon on the Widget Bar to add it to Dashboard. Widgets appear in Dashboard using a gorgeous ripple effect, and they magically zoom into position when dragged.

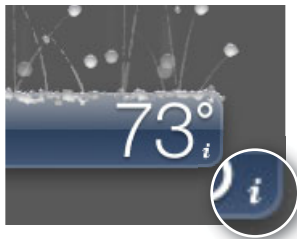


### Opening multiple copies of a widget

Widgets can be added to Dashboard multiple times. Each instance is unique and can be edited to display different information. You can use this feature in interesting ways. For example, you can display multiple instances of World Clock, each configured to show the local time in a different city, or have multiple sticky notes.

### Editing widget preferences

When you reveal the Widget Bar, you also reveal the Close and Info buttons on the widgets in Dashboard. You can use the buttons to make a widget disappear or edit its preferences. Clicking the Info button flips the widget using a three-dimensional animated effect that reveals its preference settings on the reverse side. When you're finished editing its preferences, click the Done button to flip the widget back and continue working.



The Info button flips a widget to reveal its preference settings on the reverse side.

### Linking widgets to the Internet and applications

Because widgets are created using web technologies like HTML and JavaScript, they can include hyperlinks to applications, web pages, and even other widgets. Links enable you to move quickly from Dashboard to related information on your computer or the Internet. The links can take you right to the information you need, not just launch an application or open a home page. For example, a link to a website can open Safari to a specific word on a specific page.



The Address Book widget and Address Book application are linked, so you can quickly move from the widget to the application when you need to do more than just browse addresses.

### Exchanging information with applications

Many widgets allow you to cut and paste or drag and drop information so you don't have to retype it. Since there are no menus in Dashboard, simply select the information you want to exchange in the widget and use the keyboard shortcut Command-C to copy it. Then move to the other widget, application, or document and type Command-V to paste the data.

## Creating Your Own Widget

Another exciting aspect of Dashboard is that anyone with a basic knowledge of HTML, JavaScript, and CSS can create unique and interesting Dashboard widgets.



TextEdit



Safari

The tools for creating a widget are simple: your favorite text editor and web browser, both included in Mac OS X Tiger.

### Learn by example

Sample source code is included in the developer tools distributed with Tiger, making it easy to learn how widgets work. You can find the sample widgets in the directory `/Developer/Examples/Widgets` once the Tiger developer tools are installed.

For more information on the Tiger core technologies, including WebKit and security, visit [developer.apple.com](http://developer.apple.com).

### Simple authoring tools

To get started, all you need is Mac OS X Tiger and your favorite text editor or web authoring tool. In fact, two of the most commonly used tools for developing Dashboard widgets are TextEdit and the Safari web browser. Use these tools to quickly edit, test, and debug widgets before they're distributed.

### Use Internet plug-ins and create your own

You can extend the capabilities of widgets using plug-ins. Widgets can call on all of the Internet plug-ins included in Mac OS X Tiger, such as QuickTime, Java, and ShockWave, as well as those available as downloads or included with a particular widget. You can also create a custom plug-in to add specific capabilities to your widget using traditional programming languages like C++ and Objective-C. Through plug-ins, a widget can take advantage of all of the powerful technologies in Tiger, such as the new 2D and 3D imaging and visual effects in Core Image.

### Run UNIX commands, UNIX scripts, and AppleScript scripts

It's also easy to call an AppleScript script, UNIX shell script, or UNIX command from your widget. You can call any executable, including Cocoa and Carbon applications, widgets, Perl, Python, tcl, and AppleScript scripts. With this capability, you can combine new and existing code to create interesting solutions without the investment and development time associated with traditional application development.

### High performance in a safe, secure environment

Even with their almost unlimited capabilities, you can be sure that widgets are safe to use and distribute. Each widget runs as a separate UNIX process in its own environment, or "sandbox," and is restricted to the same privileges as the user running it. It doesn't affect, and can't be affected by, other widgets or applications. Running each widget as a single process also ensures extremely high performance without sacrificing the performance of applications. Well-behaved widgets consume processor and network resources only when Dashboard is active. When Dashboard is put away, widgets are inactive, so all of the computer's resources are available to applications.

If you're creating a widget that requires a secure transaction, there are a variety of technologies at your disposal. Because widgets use WebKit, the same technology that powers Apple's Safari web browser, security can be easily implemented in your widget using HTTPS, SSL, cookies, and encryption.

### Easy to create

A widget is a special directory called a “bundle” that consists of at least four files and is identified by the .wdgt filename extension. While bundles can be opened and examined as a directory, they appear to users as a single item in the file system, making them easy to copy, move, install, and distribute. The basic elements of a widget are:

- **A PNG background image.** This file is displayed while the widget is being loaded.
- **An icon.** This is also a PNG file and represents the widget in the Widget Bar.
- **An HTML file.** This file contains the implementation of the widget and specifies the image used as the background and any text or controls to display. The HTML file is a plain-text (ASCII) file and can be created using your favorite word processor or text editor. In the HTML file, you can use any technique or trick that you would use when designing a web page, including HTML, CSS, and JavaScript.

While you can place all of your HTML, CSS, and JavaScript code into one file, splitting the markup, design, and logic into separate files makes the code easier to debug and simplifies localization.



```
<!--
File:      HelloWorld.html
Description: Main source file; specifies Widget structure.
Author:    cpw
Copyright: Copyright 2004 Apple Computer, Inc. All rights reserved.
-->

-->

<html>
<head>
<style>
        @import "HelloWorld.css";
</style>
</head>
<body>
        
        <span class="helloText">Hello, World!</span>
</body>
</html>
```

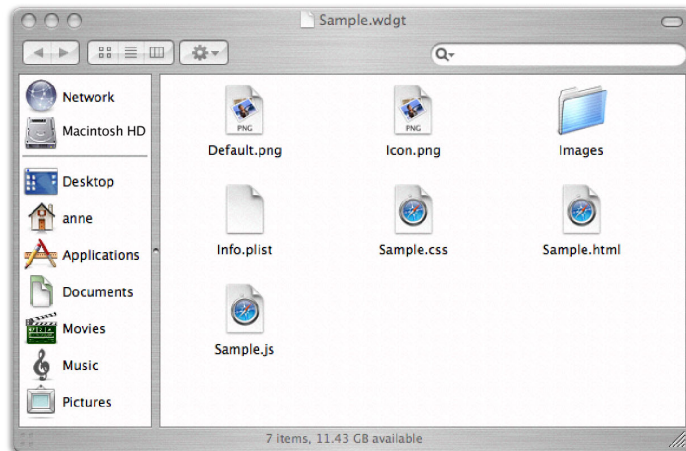
Widgets are based on the same HTML standard used to create web pages.

You can test a widget using Dashboard or Safari. Use the keyboard shortcut Command-R to reload a widget in Dashboard after making a change. Many widgets also run in Safari, speeding the repetitive test, debug, recode, and test process used to create a widget.

- **An info.plist file.** This file specifies details about the widget, such as its name, size, unique ID, and more. You can create the file using a text editor, but Mac OS X also includes a property list editor utility to make the task easier.



The process of assembling the four files into a widget is very straightforward: Create a new directory, copy or move the files inside, and add the extension `.wdgt` to its name. This extension signals Mac OS X Tiger to treat the widget as a bundle. In the widget bundle shown below, the HTML, JavaScript, and CSS have been divided into three separate files to simplify debugging and localization.



A widget is simply a directory with a `.wdgt` extension containing an image file, icon, plist, and one or more files containing the HTML, JavaScript, and CSS that implement the function of the widget.

## Learn More About Dashboard

A number of resources are available to help you learn more about Dashboard. To learn more about the features of Dashboard and the Dashboard widgets included in Mac OS X Tiger, visit [www.apple.com/macosx/tiger/dashboard.html](http://www.apple.com/macosx/tiger/dashboard.html), Mac Help in Tiger, and Apple's Support website at [www.apple.com/support](http://www.apple.com/support).

To learn more about how to create a widget, visit the Apple Developer website at [developer.apple.com](http://developer.apple.com). You can also find developer tech notes at [developer.apple.com/technicalnotes](http://developer.apple.com/technicalnotes). In addition, Mac OS X Tiger comes with full developer documentation, including information about Dashboard, WebKit, and Tiger technologies like Quartz and Core Image, as well as Xcode and the rest of the Tiger Software Development Kit (SDK).

If you'd like to communicate with other widget developers to ask questions or learn more, you're encouraged to participate in the Dashboard developer mailing list. Send email to [Dashboard-dev@group.apple.com](mailto:Dashboard-dev@group.apple.com) to join the list.

Many excellent references are available on the Internet that describe the standards-based technologies used in Dashboard. To learn more about HTML, visit [www.w3.org/MarkUp](http://www.w3.org/MarkUp). To learn more about JavaScript, visit [www.mozilla.org/js/language](http://www.mozilla.org/js/language). To learn more about CSS, visit [www.w3.org/Style/CSS](http://www.w3.org/Style/CSS).

## Mac OS X Version 10.4 "Tiger"

With Dashboard, Mac OS X Tiger provides desktop accessories that instantly appear on your screen with the touch of a key. In addition, Tiger offers more than 200 innovative new features, including Spotlight, a new desktop search technology that instantly finds anything on your computer; Automator, for easily automating complex or repetitive tasks; and iChat AV, a multiperson video conferencing system that makes it easy to keep in touch with friends, family, and colleagues around the world.

### For More Information

For more information about Mac OS X, Dashboard, and other Mac OS X technologies, visit [www.apple.com/macosx](http://www.apple.com/macosx).

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