



# Welcome to the December 2001 Developer Tools!

## Contents

Introduction

Compatibility with Mac OS X Versions Earlier than 10.1

Compatibility of Built Applications

Installing the Mac OS X Developer Tools

Possible Installation Problems and Workarounds

## Introduction

The December 2001 Developer Tools include everything you need to begin developing applications for Mac OS X, including tools, documentation, and software. For the latest information and updates to Mac OS X development tools, documentation, code samples, and technical notes, please visit <http://developer.apple.com/macosx>.

We encourage developers to join the Apple Developer Connection which provides the most convenient access to Mac OS X development resources, including technical support and pre-release software. For information, visit <http://www.apple.com/developer>.

Please read the separate “What’s New” document for information on what has changed since the September 2001 Developer Tools release, and the “About AppleScript Studio” document for more information about the major feature of this release.

## Compatibility with Mac OS X Versions Earlier than 10.1

The December 2001 Developer Tools release is intended for use on systems running Mac OS X 10.1 or later. We do **not** recommend installing these tools on earlier versions of Mac OS X.

If you are running a version of Mac OS X earlier than 10.1, we strongly encourage you to upgrade to Mac OS X 10.1 and the latest Developer Tools so you can easily take full advantage of new features of the tools, including two-level namespace. Two-level namespace was introduced in the September 2001 Developer Tools. It is a new linker feature (similar to that on Mac OS 9) that can provide faster launch times for your applications, and more correctness by ensuring that at launch time your application dynamically links with symbols from the correct libraries. This will also be more robust in the future as Apple adds new APIs to the system frameworks. Two-level namespace is the default behavior of the linker.

In Project Builder 1.1.1 on the December 2001 Developer Tools, the project file format has **not** been changed from that of Project Builder 1.1 on the September 2001 Developer Tools. Projects saved with Project Builder 1.1.1 can be opened with Project Builder 1.1.

## Compatibility of Built Applications

With the December 2001 Developer Tools, you can build two-level namespace binaries which run on Mac OS X 10.1 and later. Those two-level namespace binaries will also run on systems earlier than Mac OS X 10.1, provided that:

- those binaries do not **require** new APIs which did not exist on earlier systems. Instead, at runtime you can check for the existence of APIs and dynamically load the necessary symbols if you are running on a system where they are available.
- those binaries do not reference symbols of the same name from more than one shared library (or your application). While systems earlier than Mac OS X 10.1 can run two-level namespace binaries, those systems cannot properly resolve multiple symbols of the same name.

The gcc compiler's ABI (Application Binary Interface) for C++ programs has been changing as the compiler's support for the full C++ language has become more complete. As a result of these changes, C++ code that is bound together must be created by the same version of the compiler in order to be guaranteed to work. Consequently, it is a bad idea to create libraries with C++ interfaces that are built (or distributed) independently of the code that uses those libraries. A future version of gcc will have a more stable C++ ABI that will solve this problem.

## Installing the Mac OS X Developer Tools

This section gives installation instructions for the Mac OS X Developer Tools. As with the September 2001 Developer Tools, there is a single Developer.mpkg package which contains several separate sub-packages to allow more flexibility in installation and updating. These sub-packages are in the Packages folder. The Developer package includes the following sub-packages:

- Developer Tools (DevTools.pkg)
- AppleScript Runtime (Dec2001DevToolsExtras.pkg)
- Mac OS X SDK (DevSDK.pkg)
- Developer Documentation (DevDocumentation.pkg)
- Developer Examples (DevExamples.pkg)
- ProjectBuilderWO IDE (DevPBWO.pkg)

The new AppleScript Runtime package contains runtime frameworks to support AppleScript Studio. These components are necessary for deployment and debugging of AppleScript Studio applications, and will be distributed as part of the Mac OS X 10.1.2 Software Update. This package is required for Interface Builder in the Developer Tools package to work properly, so it cannot be unselected in a Custom Install.

ProjectBuilderWO is an older IDE used for WebObjects 4.5.1 development. It is optional and not installed by default (unless you are upgrading from an earlier release of the

Developer Tools – due to a bug, the Installer inadvertently also selects the ProjectBuilderWO IDE package for an upgrade install).

### **Installation instructions:**

- 1) Boot into Mac OS X.
- 2) Double-click the Developer.mpkg icon on the Developer Tools CD.
- 3) Click the lock icon to authenticate as a user with administrator privileges. The first user you create when setting up Mac OS X has administrator privileges by default.
- 4) Follow the instructions in the installer.

NOTE: The developer software MUST be installed on the same hard drive partition that you booted Mac OS X from. The Installer now prevents installation on any other partition.

We recommend that you do an Easy Install. If you need the older ProjectBuilderWO IDE, then rather than clicking the Install button on the Easy Install screen, click the Customize button instead to bring up the list of sub-packages to install. Click the check box next to the ProjectBuilderWO IDE package, then click Install. (Note that due to an Installer bug, the ProjectBuilderWO IDE package does get selected for installation if you are upgrading from an earlier version of the Developer Tools. You can unselect it in Custom Install if you don't want it.)

- 5) When the installation has completed, restart the computer.

If you encounter any problems in installation, including not having enough disk space to do the installation, please refer to the "Possible Installation Problems and Workarounds" section below.

The Developer package includes all the software, tools, and documentation you need to start developing Mac OS X applications. Once you've installed the Developer package, you can access developer documentation by launching Project Builder and choosing any of the menu items in the Help menu to view documentation directly in Project Builder, or by launching Help Viewer and clicking on the Developer Center link at the bottom of the Help Center welcome page. Developer applications, such as Project Builder and Interface Builder, are installed in /Developer/Applications.

## **Possible Installation Problems and Workarounds**

- There is a large amount of new documentation in the Developer Documentation package, including documentation of AppleScript Studio, JavaDoc, and a PDF version of the Project Builder documentation.

If you are attempting to install the December 2001 Developer Tools on a disk partition with little space remaining, you may need to make more space available on your disk, or go into Customize and unselect the Developer Documentation package.

If you are partitioning your hard disk to separate root and data partitions, bear in mind that the size of the Developer Tools releases are likely to continue to grow over time, so leave some room to expand. For future releases, we may investigate breaking up some of the installation packages further to help with this issue.

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