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About Mac OS X Developer Tools Compatibility and Installation

December 2002 Release for Mac OS X version 10.2

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Introduction

The Mac OS X Developer Tools includes everything you need to write software for Mac OS X, including the programming tools, system API documentation, and Mac OS X interfaces, libraries and example source code. For the latest information and updates to Mac OS X Developer Tools, documentation, code samples, and technical notes, please visit the Apple Developer Connection's Mac OS X pages, starting at 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 July 2002 Developer Tools release.

Compatibility of the Tools with Mac OS X Versions

The December 2002 release of the Developer Tools is intended for use **only** on systems running the Mac OS X version 10.2 operating system or later, and vice versa. It has been tested on the Mac OS X versions 10.2, 10.2.1, 10.2.2 and 10.2.3, at the time of this writing.

For development on Mac OS X v10.1 to v10.1.5, use the April 2002 Mac OS X Developer Tools release.

Compatibility of Built Binaries

With the December 2002 Developer Tools release, 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.

Specifically, the gcc 3.1 compiler (the default compiler for the December 2002 Developer Tools release) has a different C++ ABI than gcc 2.95 (the default compiler for earlier releases of the Developer Tools). C++ ABI differences include changes to name mangling, exception handling, and class layout and alignment. All your C++ code, including libraries and frameworks, must be built with the same compiler.

Because of this ABI change, IOKit-based device drivers and kernel extensions built with gcc 3.1 cannot be used with Mac OS X 10.1.x and earlier systems. Special compatibility code was added to Mac OS X version 10.2 to enable it to load drivers and kernel extensions that had been built with gcc 2.95.

Use of the Developer Tools with WebObjects Developer

The December 2002 Developer Tools have been validated for use for WebObjects 5.1 development. For the latest information about WebObjects development, please refer to the WebObjects Current Patch List in this AppleCare Knowledge Base document:

http://www.info.apple.com/kbnum/n70037

Installing the Mac OS X Developer Tools

This section gives installation instructions for the Mac OS X Developer Tools. There is a single Developer.mpkg package which contains several separate sub-packages to allow

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)
> - Mac OS X SDK (DevSDK.pkg)
> - Developer Documentation (DevDocumentation.pkg)
> - Developer Examples (DevExamples.pkg)
> - SDK pieces for UNIX development (BSDSDK.pkg)
> - A package with extra pieces needed for Project Builder-emacs integration
> (Dec2002DevToolsExtras.pkg)

**NOTE: The older ProjectBuilderWO IDE package (DevPBWO.pkg) is no longer
included in the Developer.mpkg package, but it is still in the Packages folder. If you
need it for WebObjects 4.5.1 development, it must be separately installed. See
instructions below.**

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. We recommend that you do an Easy Install.

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

5) Be patient at the end of installation! After all files have been written to the disk, but
prior to "Optimizing System Performance", the post-install scripts build precompiled
headers for use with gcc 3.1. This takes substantially longer than the "less than a minute"
reported by the Installer. To see what's going on during this period, you can go to the
Installer's File menu and choose Show Log. This delay should be reduced in future
releases.

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.

Installing the Older ProjectBuilderWO IDE

ProjectBuilderWO is an older Apple IDE that should now be used only by those developers still doing WebObjects 4.5.1 development. The DevPBWO.pkg package is no longer included in the Developer.mpkg. The package itself is still located inside the Packages folder. To install it, open the Packages folder and double-click on the DevPBWO.pkg icon.

Possible Installation Problems and Workarounds

• There is a large amount of new documentation in the Developer Documentation package. If you are attempting to install 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 on the root partition. For future releases, we may investigate breaking up some of the installation packages further to help with this issue.