



Welcome to the September 2001 Developer Tools CD!

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Introduction

The September 2001 Developer Tools CD includes everything you need to begin developing applications for Mac OS X, including tools, documentation, and software. In addition, it includes the latest CarbonLib SDK for Mac OS 8 and 9. 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>.

Developers are encouraged 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 on this CD.

Compatibility with Earlier Mac OS X Versions

The September 2001 Developer Tools CD is primarily intended for use on systems running Mac OS X 10.1. Earlier versions of the Developer Tools CD should not be installed or used with Mac OS X 10.1 (for example, the older linker does not work with two-level namespace binaries).

If you are running earlier versions of Mac OS X, we strongly encourage you to upgrade to Mac OS X 10.1 and the September 2001 Developer Tools so you can take full advantage of new features of the tools, including two-level namespace. Two-level namespace is a new linker feature (similar to that on Mac OS 9) that provides faster launch times for your applications and more robustness by ensuring that at launch time your application dynamically links with symbols from the correct libraries. It will help ensure greater compatibility on future versions of Mac OS X as Apple adds new APIs to the system frameworks. Two-level namespace is the default behavior of the linker.

Do not install the complete September 2001 Developer.mpkg package on systems earlier than Mac OS X 10.1. The only sub-package which may be useful is the Developer Tools package itself. If you want to install that (via Custom Install), update to at least Mac OS X 10.0.4 before doing so. When using the new tools (which default to two-level namespace) on a Mac OS X 10.0.4 system, you will need to add /usr/lib/libobjc.A.dylib as a library (and possibly other frameworks) to properly link Cocoa applications. That is not necessary on Mac OS X 10.1.

Do not upgrade from the May 2001 Developer Tools package to the September 2001 Developer Tools unless you are running at least Mac OS X 10.0.4. On systems earlier than 10.0.4, there was an Installer bug that would prevent you from launching any applications after that tools upgrade, due to over-aggressive deletion of a non-empty directory.

In Project Builder 1.1 on the September 2001 Developer Tools, the project file format has been changed. Projects saved with this new version of Project Builder will not open with earlier versions.

In this release of the tools, Apple and Metrowerks collaborated to modify the gdb debugger to support debugging with CodeWarrior Pro 7. As a result of these changes, debugging with CodeWarrior Pro 6 is no longer supported.

Compatibility of Built Applications

With the September 2001 Developer Tools, you can build two-level namespace binaries which run on Mac OS X 10.1. 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 Application Binary Interface [ABI] 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. It is not recommended that you create libraries with C++ interfaces that are built (or distributed) independently of the code that uses that 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 May 2001 Developer Tools CD, there is a single Developer.mpkg package which contains five 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)
- Mac OS X SDK (DevSDK.pkg)
- Developer Documentation (DevDocumentation.pkg)
- Developer Examples (DevExamples.pkg)
- ProjectBuilderWO IDE (DevPBWO.pkg)

ProjectBuilderWO is now an optional part of the Developer package installation. It is not installed by default.

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.

- 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.

Installing WebObjects Developer with the Mac OS X Developer Tools

To use WebObjects 5 Developer with Mac OS X 10.1, you must also install the September 2001 Developer Tools CD.

Although the WebObjects 5 Developer CD includes the May 2001 Developer Tools, the Installer on Mac OS X 10.1 will prevent the installation of those tools. You must install and use the September 2001 Developer Tools.

If you need the older ProjectBuilderWO IDE for WebObjects 4.5.1 development, you will need to specifically install that package as described in the previous "Installing the Mac OS X Developer Tools" section.

Installing the CarbonLib SDK

The CarbonLib SDK is for use on Mac OS 8 and 9. For instructions please read "About CarbonLib SDK" inside the CarbonLib SDK folder on the Developer Tools CD.

Possible Installation Problems and Workarounds

- The Developer meta-package on the September 2001 Developer Tools CD is packaged differently than the Developer package on the original Mac OS X 10.0 Developer Tools CD. Because of this, if you had installed the original Developer package and had not updated to the May 2001 Developer Tools, the Installer will report that you need over 600 MB of free disk space to install the September 2001 Developer package, as if all of the software is being newly installed on the system. You don't actually need nearly that much additional disk space, but the Installer doesn't understand that, and will not allow you to install if you do not have that much free disk space.

To free up disk space, do the following:

- 1) first back up all data on your system
- 2) open a Terminal window
- 3) enter the commands:

```
cd /Volumes/Developer\ Tools  
./RemoveOldDevFiles
```

- 4) when the script prompts you for a password, enter your Administrator password.