

## Compiling Max 5 External with Xcode 4

In chapter 1 of the text, we stated that “the information in this book most likely to go out of date is guidance on how to compile your code.” Just as this book was nearing completion, Apple released a new version of Xcode. All of the code for the text was developed under Xcode 3, and we decided to maintain that format, since the current Max 5 SDK (MaxSDK-5.1.7) is targeted toward Xcode 3. However for readers using OS X Lion, Xcode 4 is currently the only option, so this tutorial is intended to cover the transitional requirements for compiling Max 5 externals under Xcode 4.

Before proceeding, you may try to convert the Xcode 3 projects to Xcode 4, to see if you can solve any problems that arise. Once you are able to compile one external, the revised Xcode configuration will work for all the rest of your Max 5 externals.

First, comment out two lines that cause compilation errors in the header file “ext\_proto.h.” The specific commented-out lines are shown in Figure 1.

```
#ifndef WIN_VERSION
// int sprintf(char *, const char *, ...);
// int sscanf(const char *, const char *, ...);
#endif //WIN_VERSION
```

**Figure 1** Commented-out code in the header file “ext\_proto.h.”

Next modify the configuration file “maxmipsdk.xcconfig.” The problematic lines are shown in figure 2. The first line sets `SDKROOT` to an SDK file that probably does not exist on your system. Check the directory `/Developer/SDKs/` to see which SDK is installed. In this case you will see “MacOSX10.6.sdk” which is what should be used for `SDKROOT`. The second line refers to the version of GCC to use. Version 4.0 has recently been upgraded to version 4.2, so that is the number given as the `GCC_Version`. The revised configuration lines are shown in Figure 3. Once those changes have been made, it should be possible to compile Max externals with Xcode 4.

```
SDKROOT = /Developer/SDKs/MacOSX10.4u.sdk
GCC_VERSION = 4.0
```

**Figure 2** Configuration lines that must be updated for use with Xcode 4.

```
SDKROOT = /Developer/SDKs/MacOSX10.6.sdk
GCC_VERSION = 4.2
```

**Figure 3** The revised configuration file code.

For convenience, Xcode 4 projects are provided in this directory for all Max/MSP externals discussed in the text.