

How to Install a SDK for SECONDO on Mac OS X

Database Systems for New Applications

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<http://www.informatik.fernuni-hagen.de/secondo>

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This guide explains the installation procedure for various software packages needed to set up an complete development environment ready to compile SECONDO. The system has been successfully built on the following operating-systems:

- Mac OS X 10.4 Tiger
- Mac OS X 10.5 Leopard
- Mac OS X 10.6 Snow Leopard

In order to compile SECONDO'S source code you need some tools which are not provided by the operating system. Mainly these are the following:

Tool/Compiler	Version
flex	2.5.33
bison	2.1
Berkeley-DB	4.3.29
Swi-Prolog	5.6.37 or 5.10.2

You can try to get the needed tools from the Internet and set up your own environment. But we have collected them into system dependent Installation-Kits. These kits provide a script „installsdk“ which will uncompress, compile and install the above tools with minimal user interaction in the directory `$HOME\secondo-sdk`.

1 Installing Xcode Tools and Prolog

Before we can run the script, two Meta-Packages need to be installed:

1. Install the XCode Tools:

- Doubleclick on the package icon `xcodeTools.mpkg` in the folder `xcode Tools` on the Mac OS X installation DVD and follow the instructions.

The package can also be downloaded from the Apple Web Sites. The version tested is Xcode 2.5 for Tiger, Xcode 3.0 for Leopard, Xcode 3.2 for Snow Leopard.

2. Install PROLOG:

- Copy (and unpack, if necessary) the `SDK_OSX` into your home directory.
- In the directory `SDK_OSX/mac_osx` you will find several prolog install kits.

a. For Mac OS X 10.4 Tiger and Mac OS X 10.5 Leopard:

Use `swi-prolog-5.6.37` and the version that is appropriate to your hardware (Intel or Power-PC).

b. For Mac OS X 10.6 Snow Leopard:

Use `swi-prolog-5.10.2-snow-leopard.mkpg`. This is for Intel architectures only.

- If necessary, doubleclick on the package icon `mpkg.zip` to unpack it.
- Doubleclick on the icon of the unpacked file and follow the installation procedure.

2 Running the Installation Script

In the installation kit you will find the installation script. Open a Terminal window (to be found in folder `<Disk>/Programme/Dienstprogramme as Terminal`) and enter the following commands:

```
cd <path>/SDK_OSX
./installsdk -p mac_osx -s
```

This will install everything below the directory `$HOME/secondo-sdk`. The installation of all tools assumes a fixed organization of directories, this is needed to prevent the user from defining many variables with path information. After the script has finished you have to do a manual configuration step.

In the home directory, create a file `.profile`, for example, saying:

```
vim ~/.profile
```

and enter the following:

```
export SECONDO_SDK=$HOME/secondo-sdk
export SECONDO_PLATFORM="mac_osx"
export SECONDO_BUILD_DIR=$HOME/secondo
source $SECONDO_SDK/secondorc
```

Note: When you use a Power-PC architecture you need also to change some configuration settings in file `secondo.config.mac_osx` which is stored in `$HOME/secondo-sdk`.

3 Two Changes for Snow Leopard

Two small changes are needed for Mac OS X 10.6 Snow Leopard due to the newer SWI-Prolog version used.

1. It is necessary to adapt the configuration file

```
$SECONDO_SDK/secondo.config.mac_osx
```

Replace

```
#SWI Prolog
export SWI_HOME_DIR="/opt/local/lib/swipl-5.6.37"
export PL_INCLUDE_DIR="$SWI_HOME_DIR/include"
#export PL_LIB_DIR="$SWI_HOME_DIR/lib/powerpc-darwin8.7.0"
export PL_LIB_DIR="$SWI_HOME_DIR/lib/i386-darwin8.10.1"

export PL_VERSION=50637
```

by

```
#SWI Prolog
export SWI_HOME_DIR="/opt/local/lib/swipl-5.10.2"
export PL_INCLUDE_DIR="$SWI_HOME_DIR/include"
export PL_LIB_DIR="$SWI_HOME_DIR/lib/i386-darwin10.4.0"
export PL_LIB=swipl

export PL_VERSION=51020
```

2. Navigate into the directory

```
$SECONDO_SDK/auxtools/include
```

and enter the commands:

```
mv jpeglib.h jpeglib.h.deprecated
ln -s /opt/local/include/jpeglib.h
```

4 Checking the Environment

Start a new shell and study the messages. All tools should be reported in their correct versions. If something fails you may need to adjust the configuration file

```
$SECONDO_SDK/secondo.config.mac_osx.
```

If some steps of `installsdk` failed you may consult the more comprehensive document called „Setting up an SDK for Secondo“ (file `SDK_SETUP.pdf`).

5 Compiling Secondo

The SECONDO version supplied with the SDK works only for Mac OS X 10.4 Tiger. For Mac OS X 10.5 Leopard, get a SECONDO system higher than version 2.8.3 from the web site and unpack it into the home directory (after removing the older SECONDO version from the SDK). For Mac OS X 10.6 Snow Leopard use a version higher than 3.0. In any case we recommend to retrieve a current version.

The commands below will compile SECONDO:

```
cd ~/secondo
make
```

In the User-Manual you will find helpful information about using SECONDO. Since a Mac-keyboard has a very reduced symbol set, you should know the following mappings: [= alt-5,] = alt-6, { = alt-8, } = alt-9, ~ = alt-7, | = alt-N.

6 LaTeX and Ghostscript

SECONDO'S program code documentation is made with the PD-System which translates program code files into LateX. Additonally, for previewing EPS pictures together with LaTeX you need Ghostscript with its preview program. Hence, for using the PD-System you have to get and install this Software.