

Secondo Installation on Ubuntu 8.04 LTS

1 Package Installation

Use the Synaptic Package Manager (found under System, Administration) and proceed as shown in the following table to install the various software packages needed by Secondo. In some cases you can also enter the "sudo" command shown.

Berkeley DB	Synaptic Package Manager Search for Berkeley DB select libdb4.3+-dev (4.3.29-1ubuntu1) (This also selects automatically libdb4.3, libdb4.3++c2, and libdb4.3-dev) apply installation
SWI-Prolog	Synaptic Package Manager Search for SWI-Prolog select swi-prolog and swi-prolog-club apply show details [Message: libgmp3c2 (Version 2:4.2.2+dfsg-1ubuntu2) will be installed swi-prolog (Version 5.6.47-1) will be installed swi-prolog-club (Version 5.6.47-1) will be installed] select libgmp3-dev [libgmp3-dev (Version 2:4.2.2+dfsg-1ubuntu2) will be installed libgmpxx4ldbl (Version 2:4.2.2+dfsg-1ubuntu2) will be installed]
gcc	present: gcc-Version 4.2.4 (Ubuntu 4.2.4-1ubuntu4) sudo apt-get install g++ [The following NEW packages will be installed: g++ g++-4.2 libstdc++6-4.2-dev]
Sun's Java SDK	Synaptic Package Manager search for java select sun-java5-bin sun-java5-demo sun-java5-sdk sun-java5-jre apply show details [java-common (Version 0.28ubuntu3) will be installed odbcinst1debian1 (Version 2.2.11-16build1) will be installed sun-java5-bin (Version 1.5.0-16-2ubuntu2) will be installed sun-java5-demo (Version 1.5.0-16-2ubuntu2) will be installed sun-java5-jdk (Version 1.5.0-16-2ubuntu2) will be installed sun-java5-jre (Version 1.5.0-16-2ubuntu2) will be installed unixodbc (Version 2.2.11-16build1) will be installed]

bison	sudo apt-get install bison bison (GNU Bison) 2.3
flex	sudo apt-get install flex flex 2.5.34
make	present: 3.81
bash	present: GNU bash, version 3.2.39(1)-release (i486-pc-linux-gnu)
libjpeg	Synaptic Package Manager: libjpeg62 version 6b-14 is installed select libjpeg62-dev apply show details [Message: libc6-dev (Version 2.7-10ubuntu5) will be installed libjpeg62-dev (Version 6b-14) will be installed linux-libc-dev (Version 2.6.24-24.61) will be installed]
libreadline	Synaptic Package Manager: libreadline5 version 5.2-3build1 is installed select libreadline5-dev apply show details [libncurses5-dev (Version 5.6+20071124-1ubuntu2) will be installed libreadline5-dev (Version 5.2-3build1) will be installed]
libgsl	Synaptic Package Manager: libgslOldbl version 1.10-4 is installed install libgsl0-dev [libgsl0-dev (Version 1.10-4) will be installed]

2 *Secondo Installation*

The following steps are needed:

1. Download Secondo (Linux version) from the Secondo web site.
2. Unpack it so that there is a subdirectory "secondo" in your home directory \$HOME.
3. There are two small changes that need to be applied to Secondo versions to make them run completely, including the optimizer server, on the Ubuntu 8.04 platform. These changes are done automatically by a script. Download this script called "patchUbuntu804" from the Secondo web site and place it into your home directory. Note that everything else except the optimizer server (needed to invoke query optimization from the Javagui) works without this patch.
4. Use gedit to edit a file in the home directory called ".secondorc". The file should look as follows (you can also download it from the Secondo web site).

```
export SECONDO_PLATFORM=linux
export SECONDO_BUILD_DIR=$HOME/secondo
export BERKELEY_DB_LIB="db_cxx"
export BERKELEY_DB_DIR=/usr
export J2SDK_ROOT=/usr/lib/jvm/java-1.5.0-sun
```

```

export SWI_HOME_DIR=/usr/lib/swi-prolog
export PL_LIB_DIR=$SWI_HOME_DIR/lib/i386
export PL_INCLUDE_DIR=$SWI_HOME_DIR/include
export PL_VERSION=50647
export SECONDO_JAVA=$J2SDK_ROOT/bin/java
export readline=true
export PATH=$PATH:.
export
SECONDO_CONFIG=$SECONDO_BUILD_DIR/bin/SecondoConfig.ini

./patchUbuntu804
alias secroot='export SECONDO_BUILD_DIR=$PWD;
$HOME/patchUbuntu804'

```

5. Enter into the file .bashrc in your home directory a line:
`source $HOME/.secondorc`

6. For some reason, in Ubuntu 8.04 the bash shell has been replaced by a dash shell. This leads to problems. To undo this change, type
`sudo dpkg-reconfigure dash (select "no")`

3 Compiling Secondo

You can now in a new shell window compile Secondo. From your home directory:

```

cd secondo
make

```

If you wish to work with another Secondo version located in some other directory, proceed as follows:

```

cd <path to the secondo directory, e.g. Secondo2.9/secondo>
secroot
make

```

4 Running Secondo

To start a complete Secondo system, including kernel system, optimizer, and Javagui, proceed as follows:

1. Open a new shell window and type
`cd secondo/bin`
`SecondoMonitor -s`

2. Open a new shell window and type
`cd secondo/Optimizer`
`StartOptServer`

3. Open a new shell window and type
`cd secondo/Javagui`
`sgui`

5 Manually Applying the Patch for Ubuntu

Without the patch everything works except the optimizer server (i.e., the call "StartOptServer").
With the following two changes, also the optimizer server works.

7. In the file "secondo/Jpl/src/makefile" change the line
`LINK_FLAGS := $(JNI_CCFLAGS) $(PLDFFLAGS) $(JPLDEF)`
to
`LINK_FLAGS := $(JNI_CCFLAGS) $(PLDFFLAGS) -lrt $(JPLDEF)`
8. Change the file "secondo/Optimizer/StartOptServer.sh" by uncommenting the lines
`if ["$SECONDO_PLATFORM" != win32]; then`
`unset SWI_HOME_DIR`
`fi`
so that they are
`#if ["$SECONDO_PLATFORM" != win32]; then`
`# unset SWI_HOME_DIR`
`#fi`

Note that these manual changes need to be applied to each Secondo version that you download.
Therefore the patch provided may be more practical.

Without the patch, use the line in \$HOME/.secondorc:

```
alias secroot='export SECONDO_BUILD_DIR=$PWD'
```