# Getting started with eclipse

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http://www.eclipse.org/

# Why use eclipse?

- IDE: edit, navigate, compile, debug, ...
- multi-language: Java, C/C++, Python, Perl, Fortran, ...
- multi-platform: Linux, Windows, Mac OS X, Solaris, ...
- actively developed by IBM, Intel, Borland, Oracle, ...
- tons of plugins available
- open source

# How to create a project

(1) copy from a folder, e.g. /source/gromacs/*

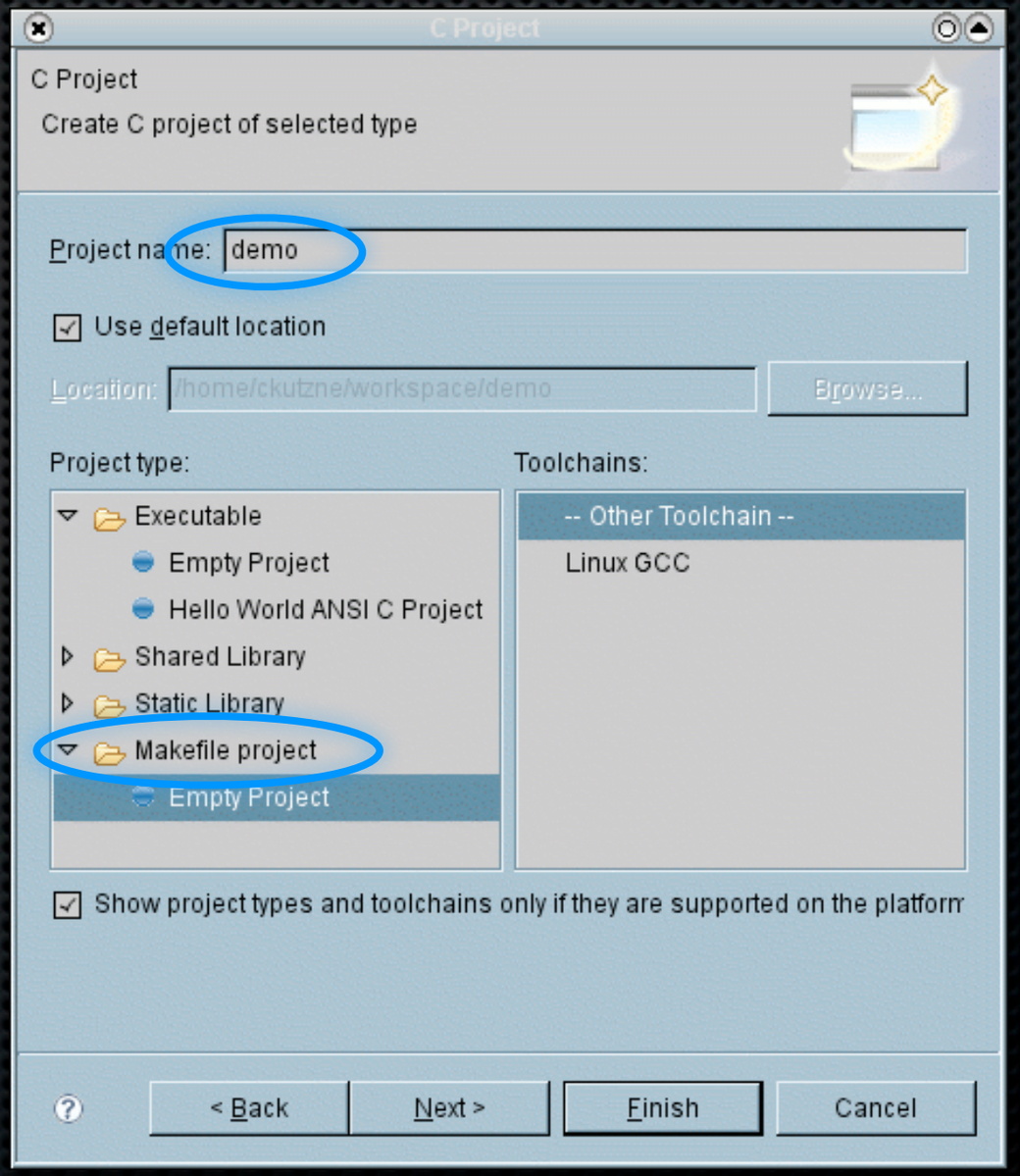
(2) check out from a version control system,

1. CVS
2. SVN

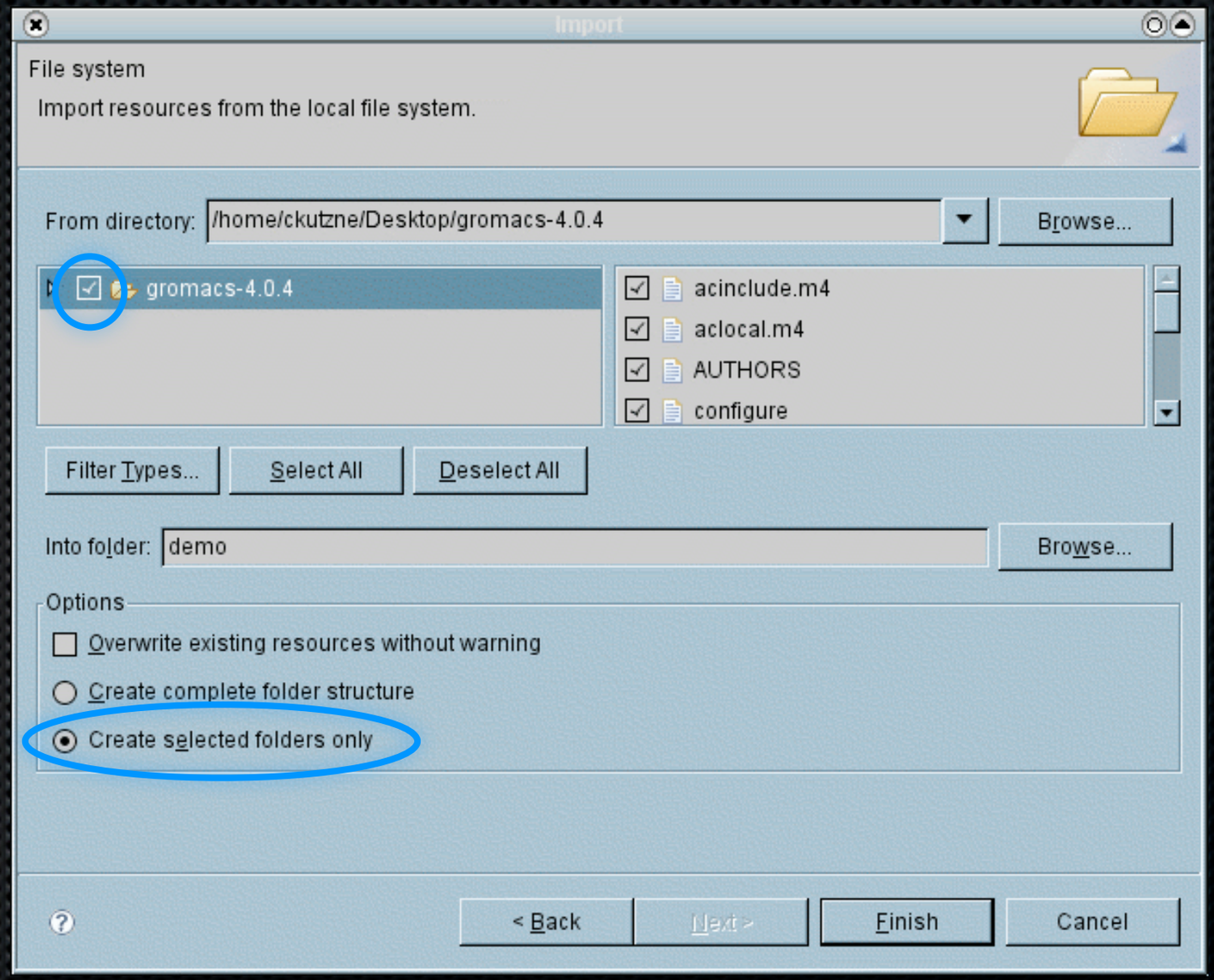
(3) create from scratch

# (1) Project from folder

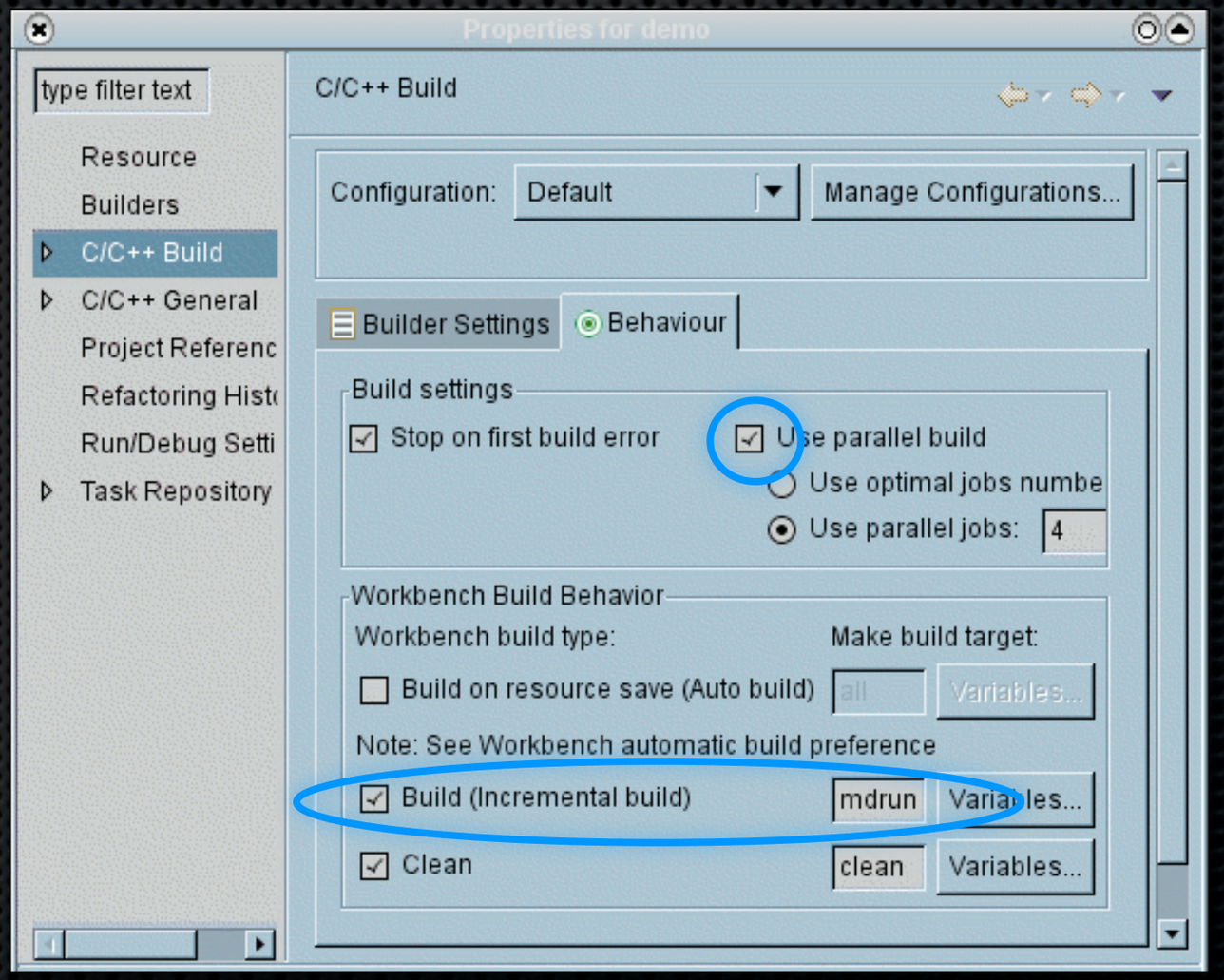
- e.g. unzip gromacs-4.0.4.tar.gz to /home/you/gromacs-4.0.4
- /usr/local/bin/eclipse
- eclipse stores projects in /home/you/workspace
- file > new > project > C will create an empty project



- right-click on the demo project and select Import
- import > file system > from directory > browse

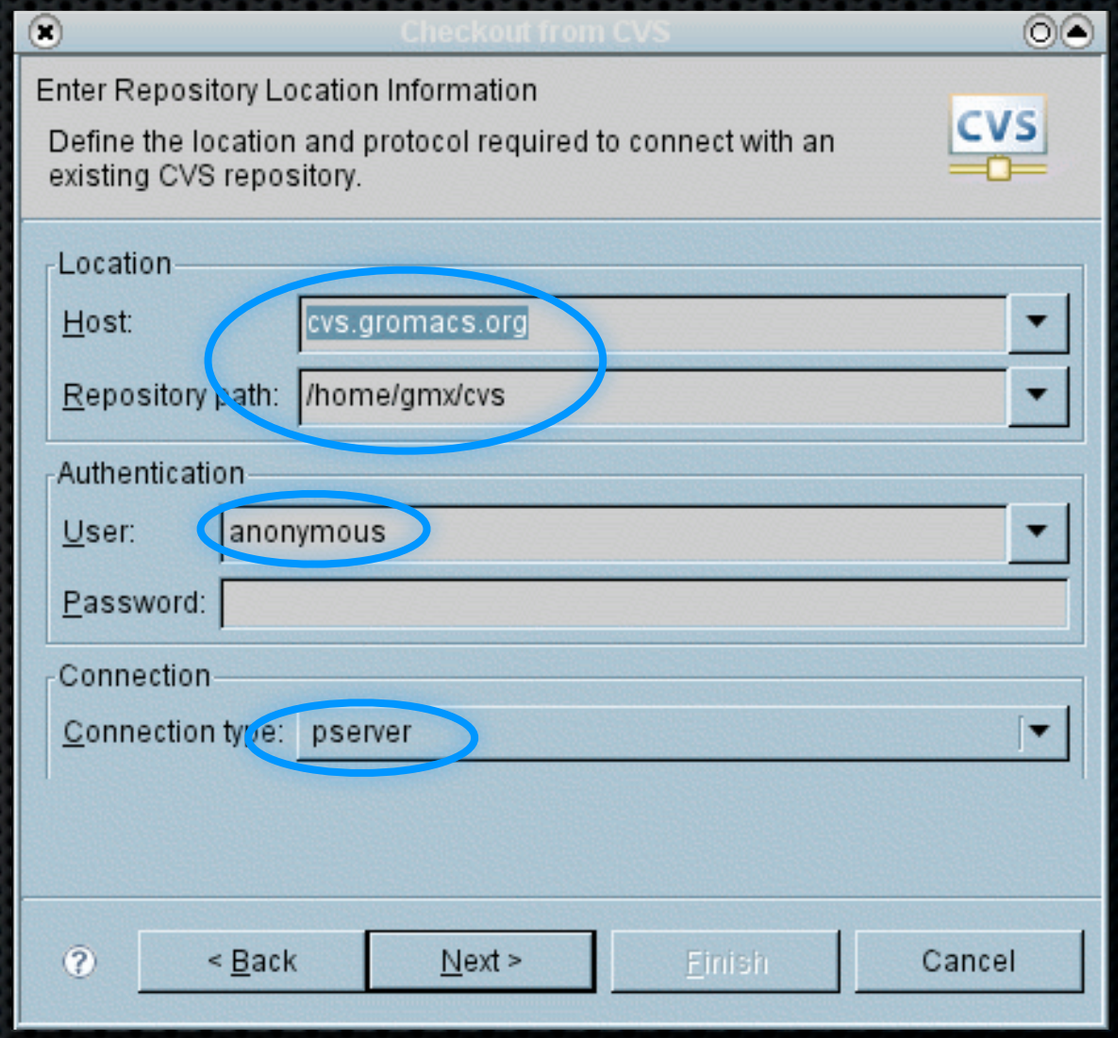


- construct the gromacs makefiles, therfore in /home/you/workspace/demo do
  export PATH=/usr/local/lam/714-gcc412-without-fortran/bin:$PATH
  export LDFLAGS=-L/usr/local/fftw/312-gcc412/lib
  export CPPFLAGS=-I/usr/local/fftw/312-gcc412/include
  export CFLAGS="-g -O0"
  ./configure --enable-mpi
- in project > properties > C/C++ build choose compile settings
- compile with CTRL-B

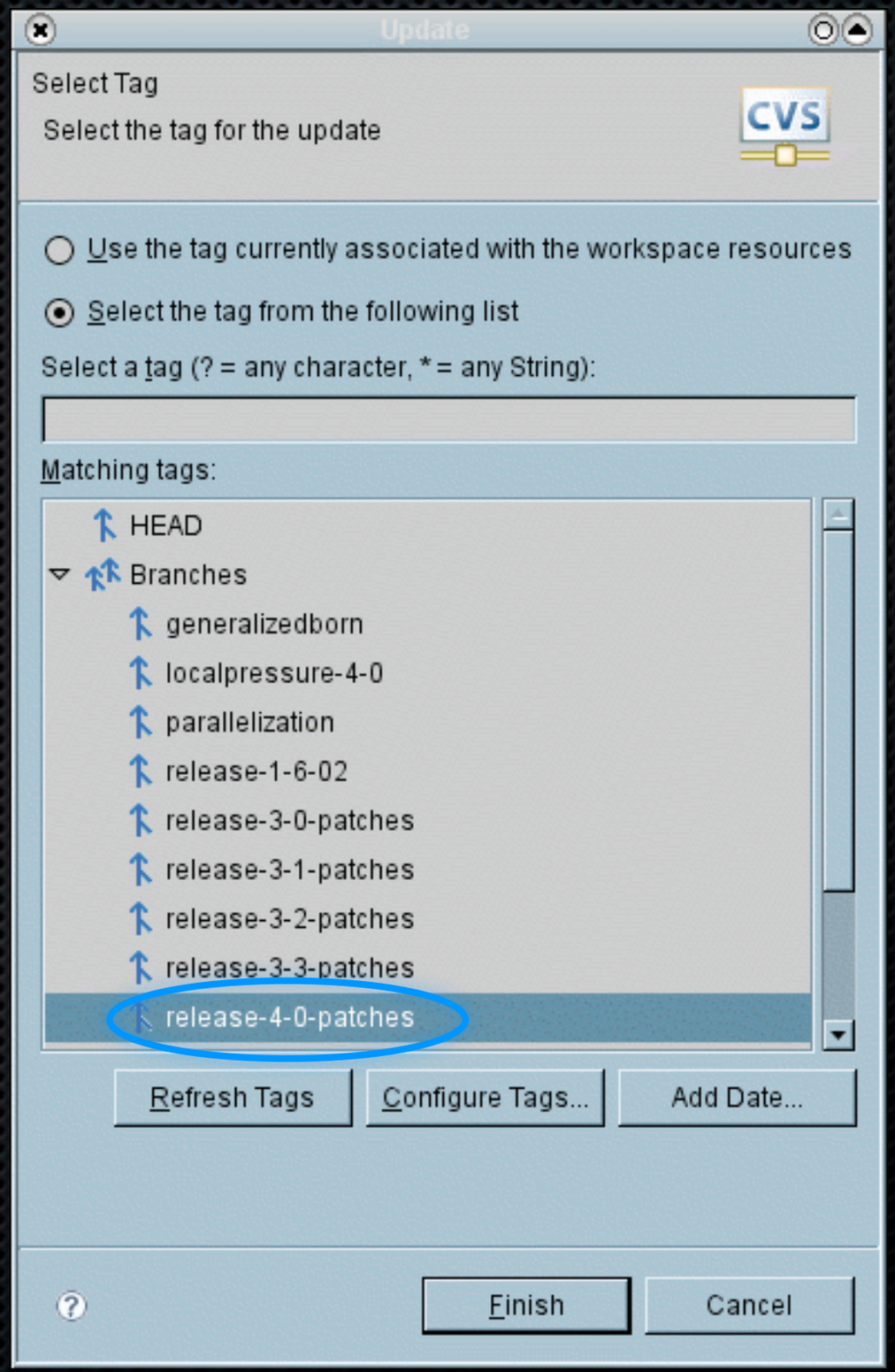


# (2) Project from CVS

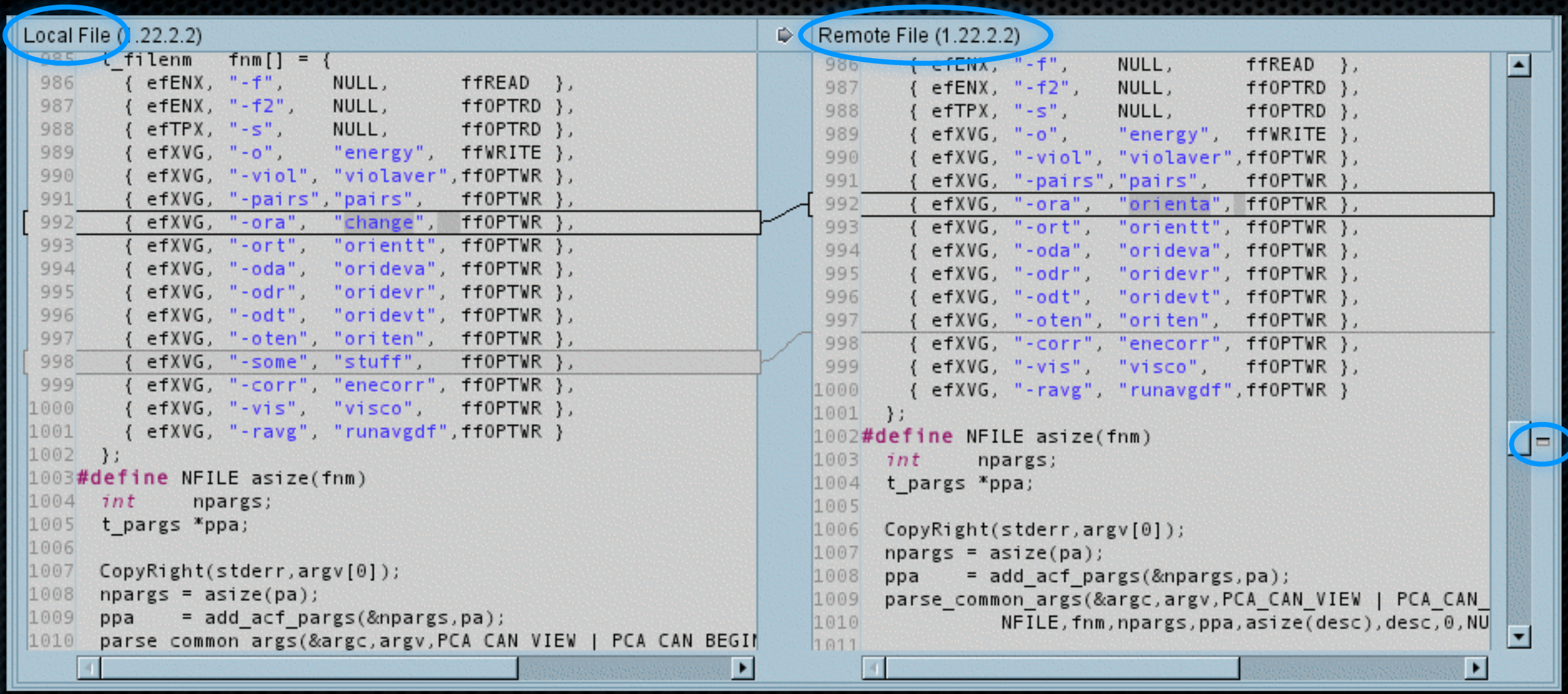
- file > new > project > CVS
- create repository location for later usage
- select module gmx, this will check out the HEAD branch
- File > New > Other > C > Convert to a C/C++ Make Project
- Navigation available after compile



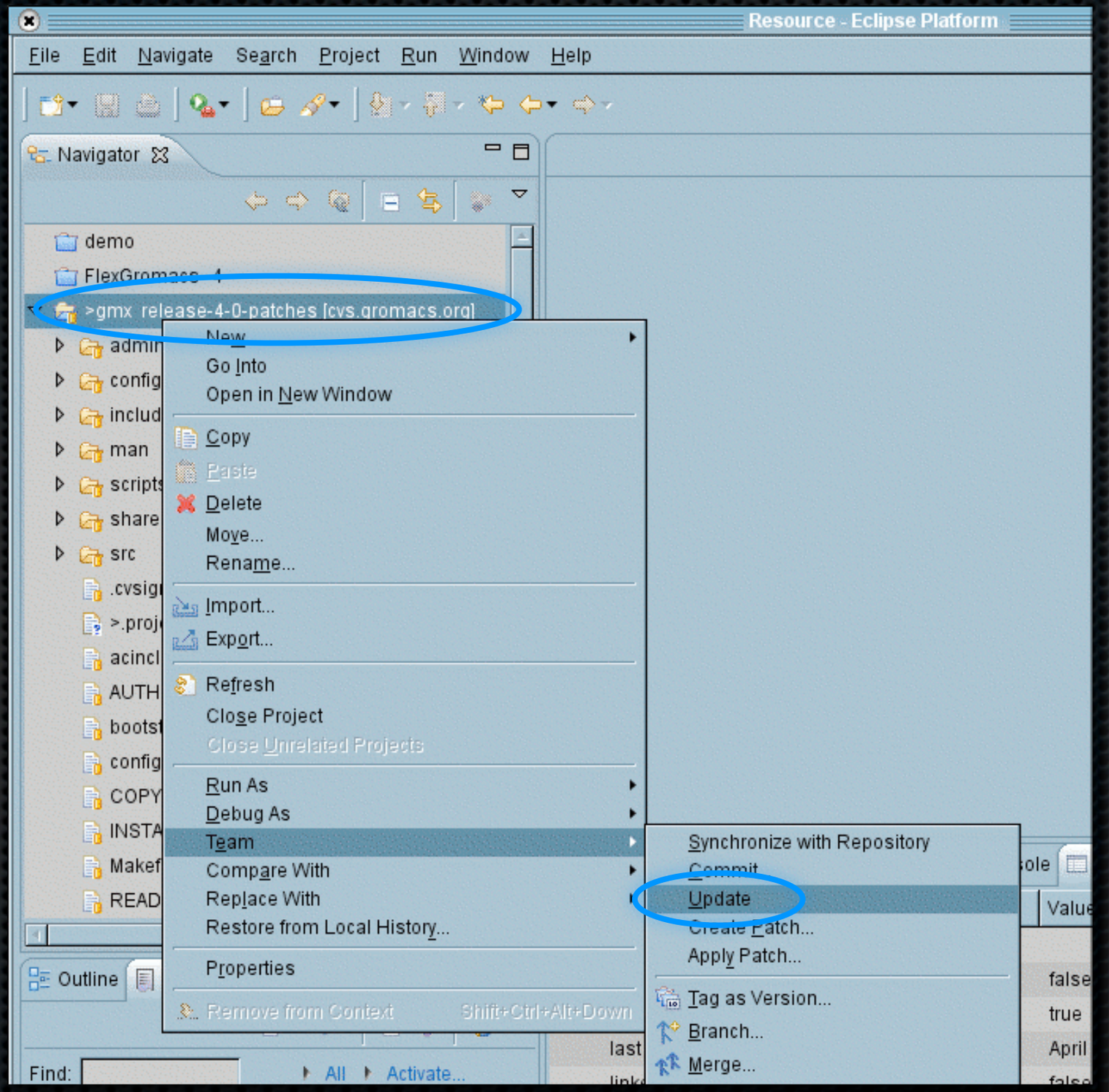
- you can switch anytime to another branch:
  right-click on the project > Team > Switch to another Branch



- check your changes with
  right-click project > team > synchronize with repository

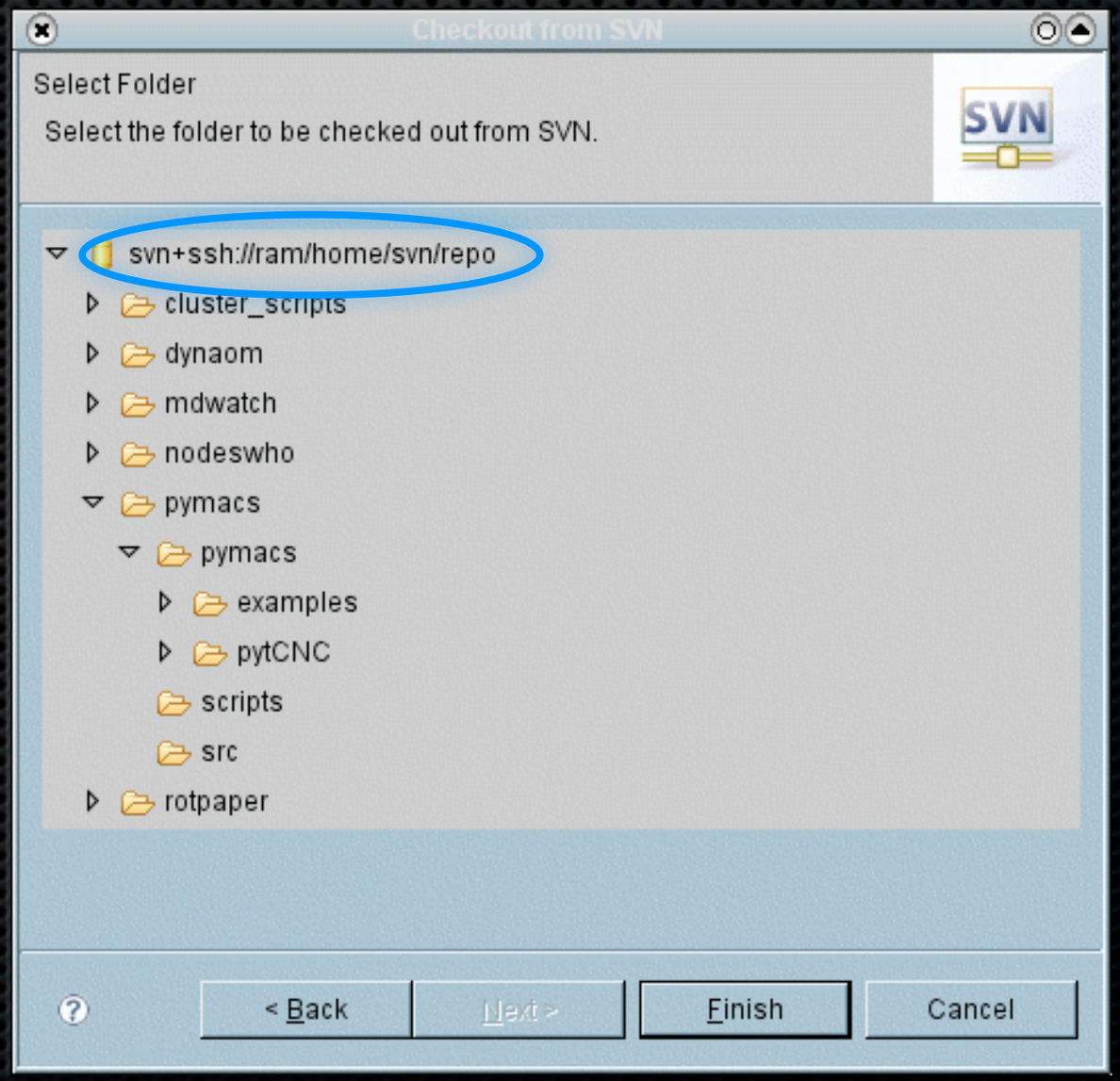


- incorporate newest features / bugfixes by updating
- those will be merged with your changes



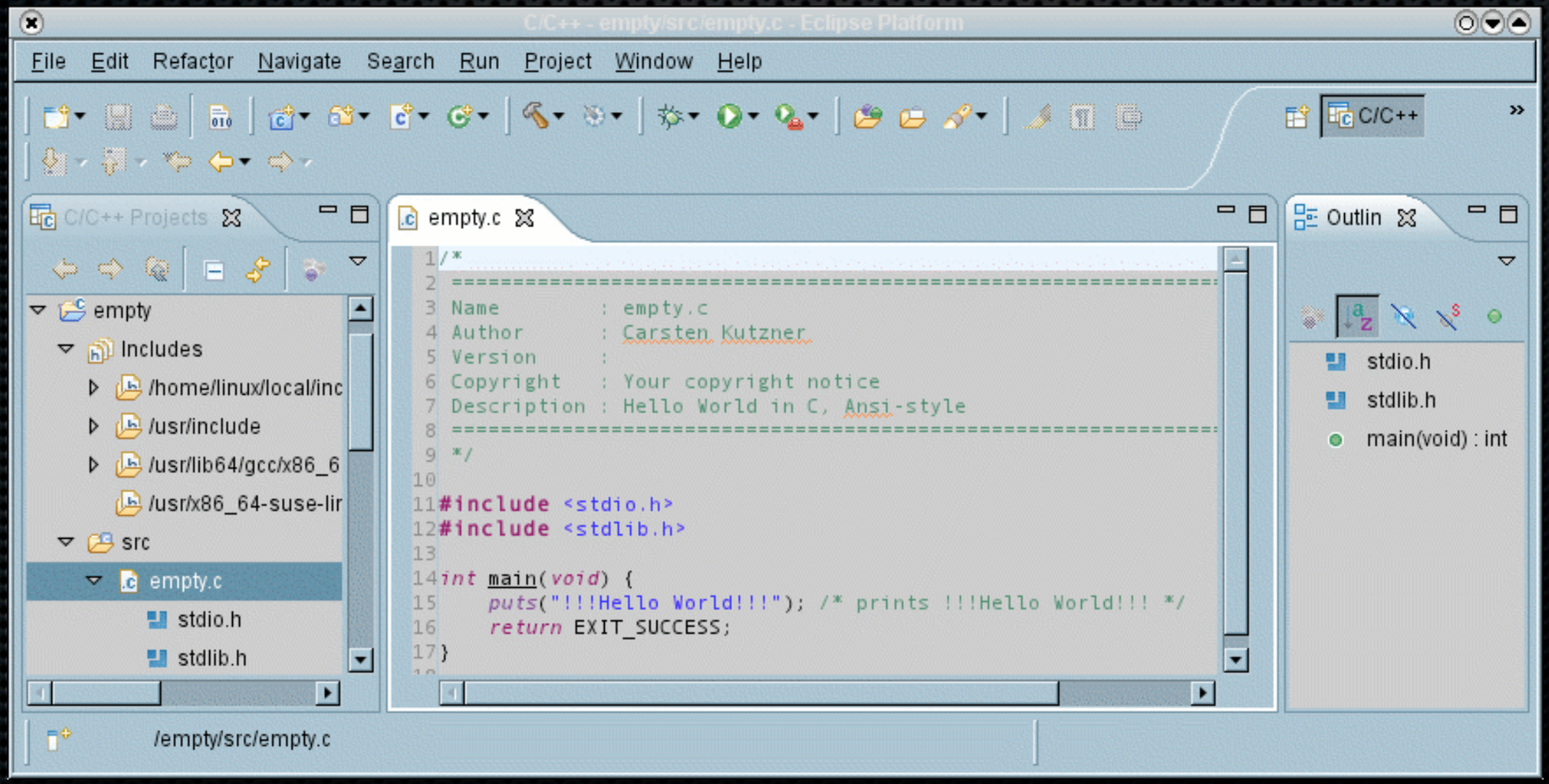
# (2) Project from SVN

- similar to CVS checkout
- file > new > project > SVN
- give repository URL
- group SVN server is on ram



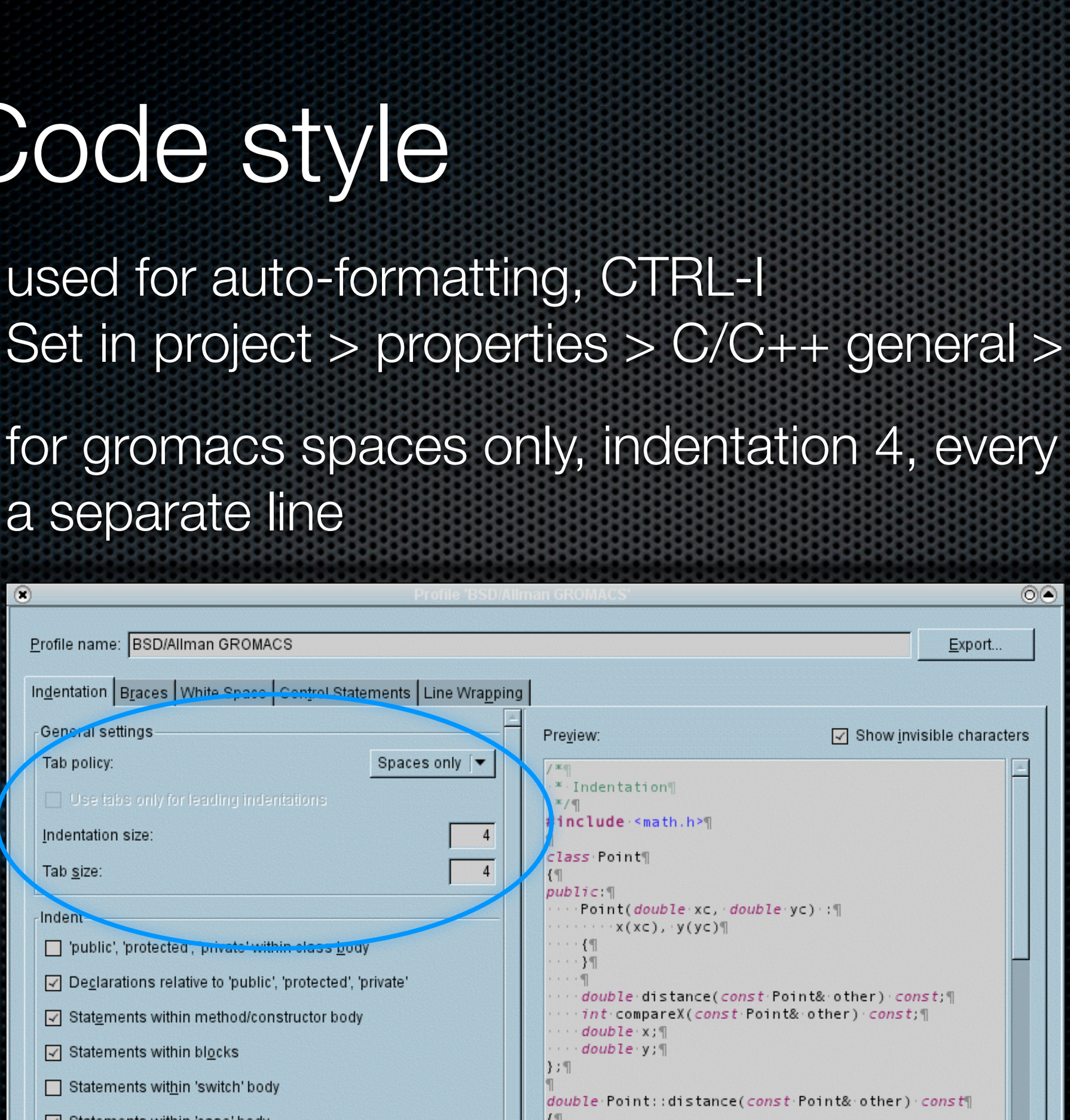
# (3) Project from scratch

- file > new > project > C > Hello World ANSI C project

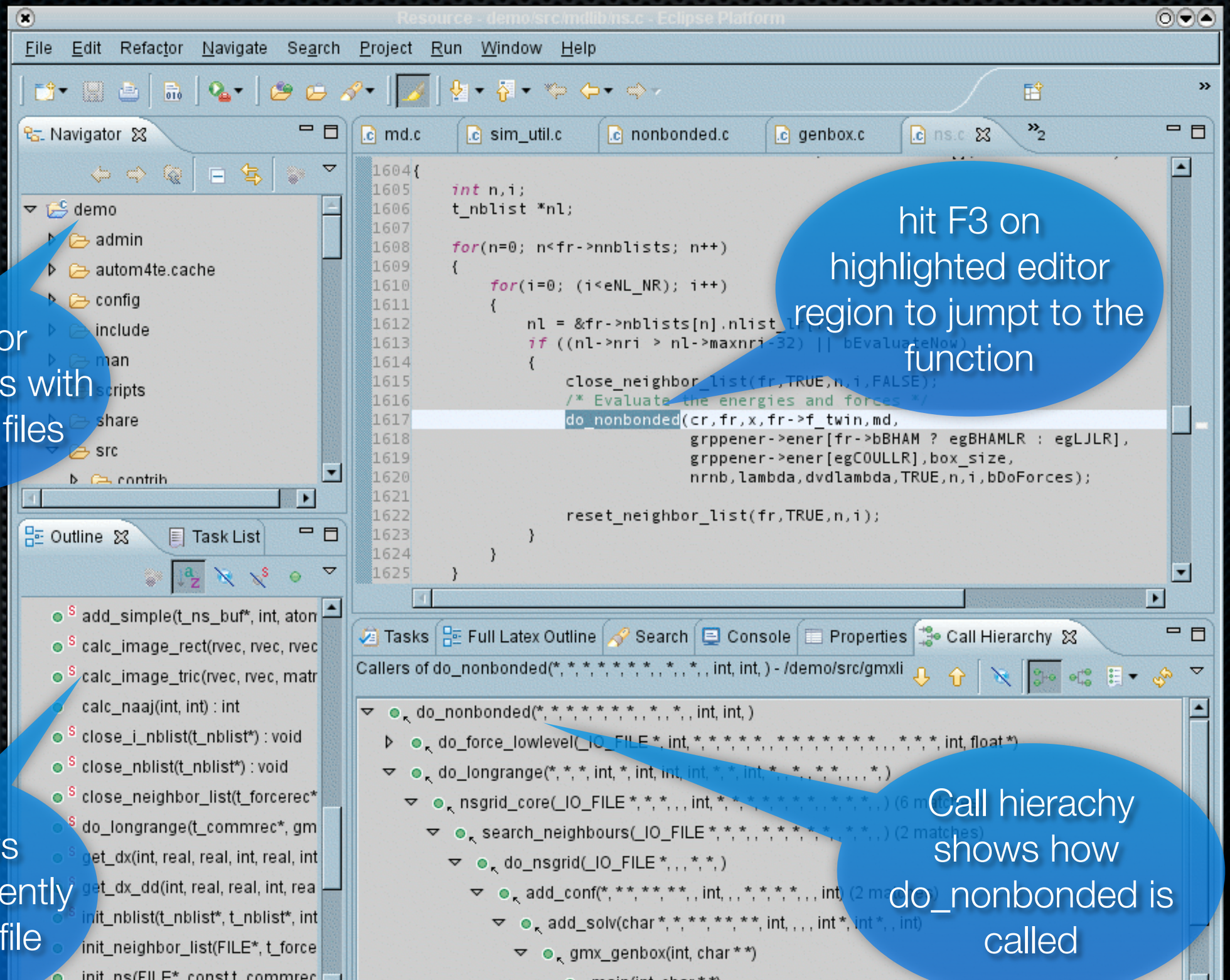


# Code style

- used for auto-formatting, CTRL-I
  Set in project > properties > C/C++ general > code style
- for gromacs spaces only, indentation 4, every { and } on a separate line



# The eclipse interface




The navigator contains projects with their folders & files

hit F3 on highlighted editor region to jumpt to the function

Outline shows functions of currently edited source file

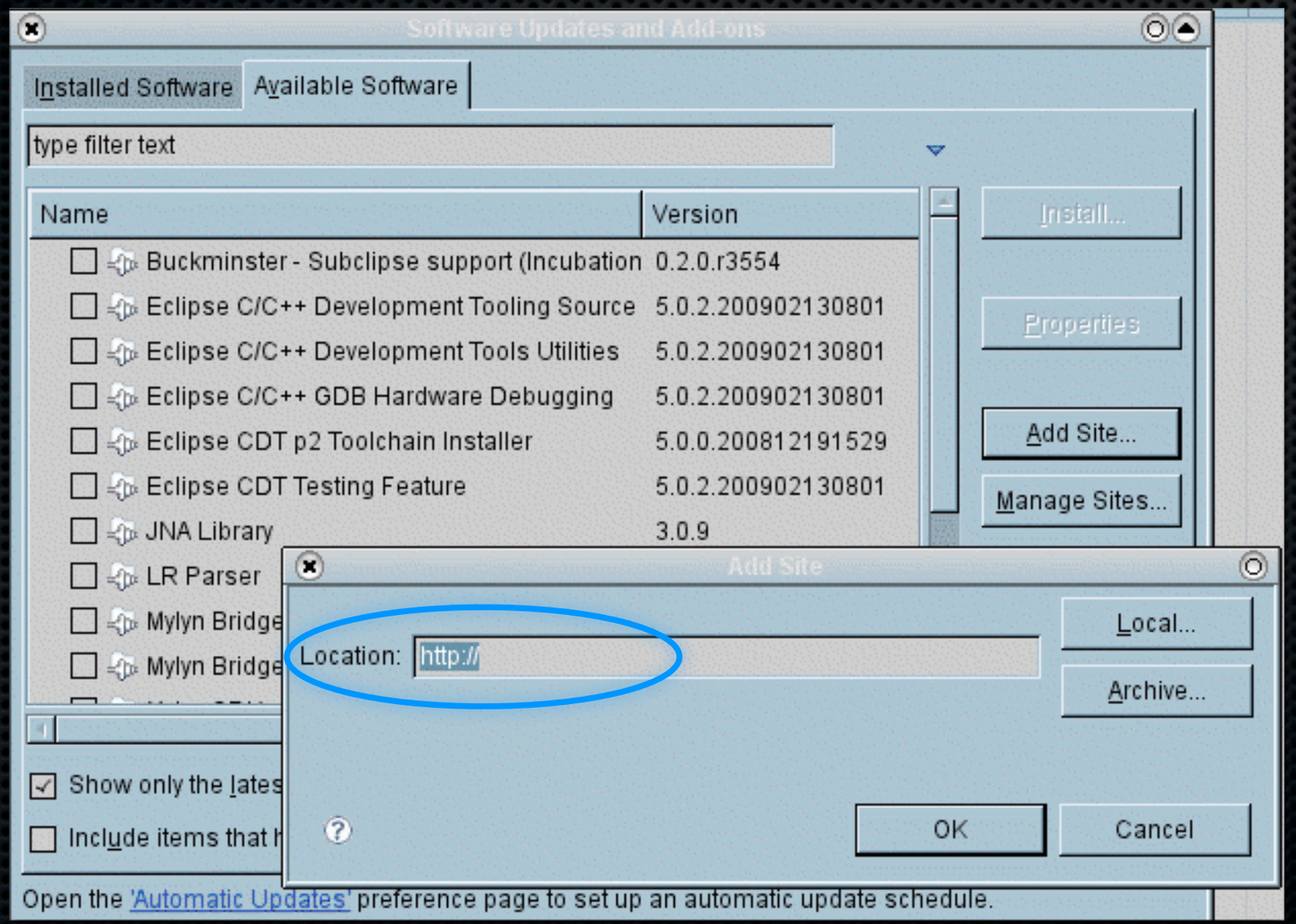
Call hierachy shows how do_nonbonded is called

# Frequently Used Commands

- jump to definition – F3
- Find/Replace – Ctrl-F
- Search files – Ctrl-H
- Correct Indentation – Ctrl-I
- Comment/Uncomment – Ctrl-/
- Refactor – Shift-Alt-R
- Call Hierarchy – Ctrl-Alt-H
- Auto-completion – Ctrl-Space

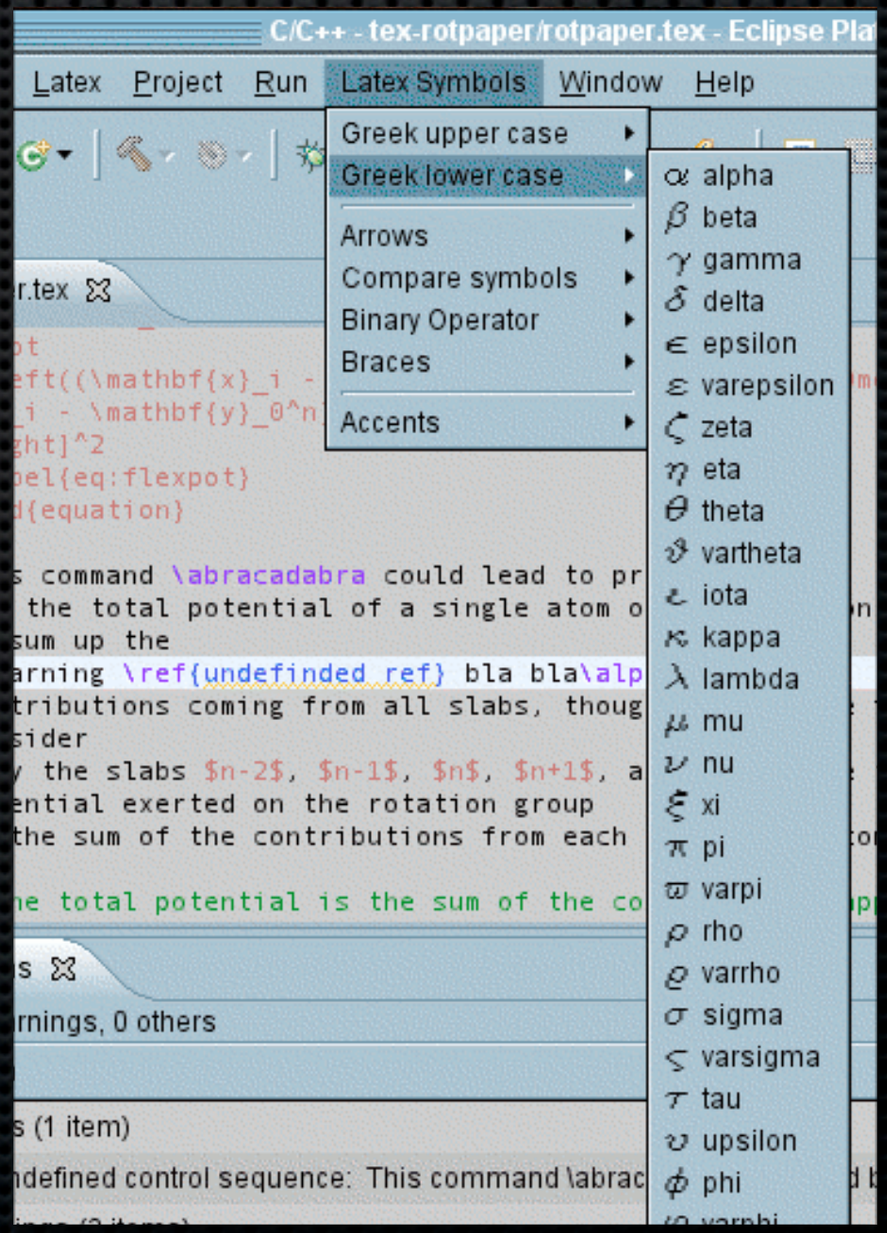
# Extending eclipse

- Add software location  in Help > Software updates



# Typsetting LaTeX in eclipse

- texlipse.sourceforge.net
- Ctrl-B typesets
- Ctrl-4 opens e.g. PDF viewer
- Shift-Ctrl-6 Spell-checks
- can be combined with other features, to e.g. achieve version control of tex project



Errors and warnings can be easily identified in editor

Outline shows document structure

C/C++ - tex-rotpaper/rotpaper.tex - Eclipse Platform

File Edit Refactor Navigate Search Latex Project Run Latex Symbols Window Help

C/C++

C/C++ Proj

- orig_tex-rotpaper
- pimp_my_RIS
- pimp_my_tpr
- SynSim
- tex-gb
- tex-Logbuch
- tex-rotpaper [trunk]
  - biblio.bib 114 4/
  - comparison.ai 8
  - comparison.pdf
  - gaussians.pdf 1
  - jcc-new.bst 73 3
  - pullfigure.pdf 73
  - rotpaper.aux
  - rotpaper.bbl
  - rotpaper.blg
  - rotpaper.brf
  - rotpaper.log
  - rotpaper.out

rotpaper.tex

```
251 \cdot
252  \left((\mathbf{x}_i
253 {y}_i - \mathbf{y}_0^n(t)\right)
254 \right]^2
255 \label{eq:flexpot}
256 \end{equation}
257 %
258 This command \abracadabra could lead to problems.
259 For the total potential of a single atom of the rotation group we have
260 to sum up the
261 a warning \ref{undefinded ref} bla bla
262 contributions coming from all slabs, though in practice it suffices to
    consider
    only the slabs $n-2$, $n-1$, $n$, $n+1$, and $n+2$. The total extra
    potential exerted on the rotation group
    is the sum of the contributions from each of its $N$ atoms:

    % The total potential is the sum of the contributions applied to each
```

Outline

- Preamble
- Introduction
- Fixed axis rotation
  - figure
- Flexible axis rotation
  - figure
  - Alternative formulation of the potent
- Implementation and scaling
- Example applications

Problems

1 error, 3 warnings, 0 others

| Description | Resource | Path | Location | Type |
|---|---|---|---|---|
| Errors (1 item) | | | | |
| Undefined control sequence: This command \abracadabra (followed by: could lead tc | rotpaper.tex | | | |
| Warnings (3 items) | | | | |
| Key undefinded ref is undefined | | | | |
| found PDF version <1.5>, but at most version <1.4 | | | | |
| PageGroup detected which pdfTeX can't handle. I | | | | |

Writable

rotpaper.pdf - KP

File Edit View Go Tools Settings Help

125%

the shown Gaussians. Each Gaussian has its maximum at $d = n \cdot \Delta$

can be written as

$$g_n(\mathbf{x}_i) = \gamma \cdot \exp\left(-\frac{\beta^2(\mathbf{x}_i)}{2\sigma^2}\right)$$

posing $\sigma = 0.7\Delta x$ and $\gamma = 1/1.7547$ yields (see Fig. 2):

# Debugging in eclipse

- Run > Debug Configurations > select binary