A (very brief) intro to Eclipse

http://eclipse.org

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The Goals

What we all want is a level of integration that magically blends separately developed tools into a well designed suite. And it should be simple enough that existing tools can be moved to the platform without using a shoehorn or a crowbar.

The platform should be open, so that users can select tools from the best source and know that their supplier has a voice in the development of the underlying platform.

It should be simple to understand, yet robust enough to support integration without a lot of extra glue.

It should provide tools that help automate mundane tasks. It should be stable enough so that industrial strength tools can build on top of it. And it should be useful enough that the platform developers can use it to build itself.

These are all goals of Eclipse. […]

[Eclipse Plug-in Developer Guide]

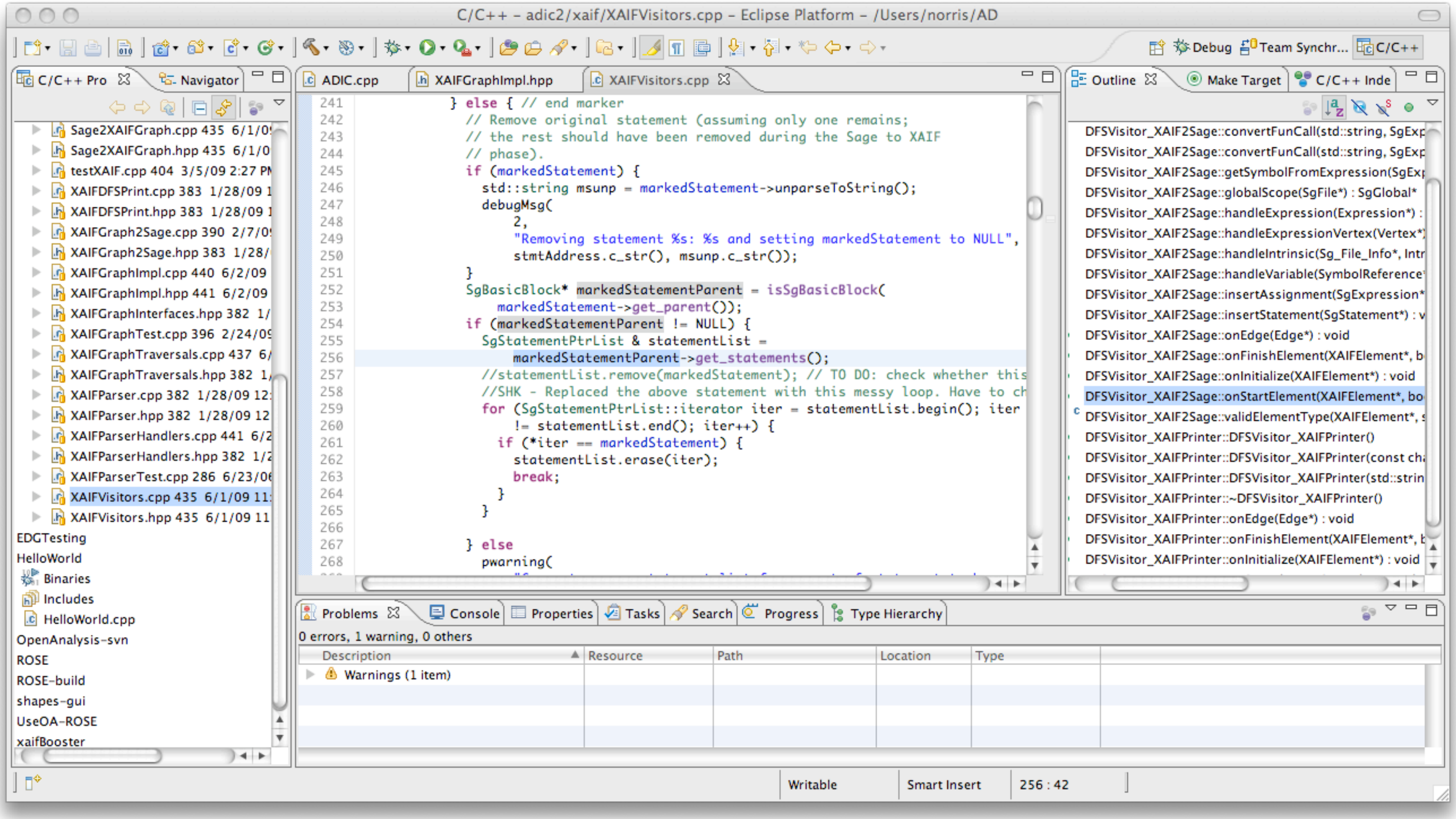
Requirements

- Java 2
- A reasonably recent machine (more memory helps)
- A large display (seriously)
- Eclipse SDK
  - http://www.eclipse.org/downloads/
- Optionally: C/C++ Development Tools (CDT/Europa), Eclipse Modeling Framework (EMF), many others

Terminology

- Integrated Development Environment (IDE)
  - Workbench
  - Perspectives: JDT, CDT, Debug, Team (cvs or svn), …
  - Views: editor, navigator, type hierarchy, error log, content outline, …
  - Action sets and actions: run, build, debug, open, …
- Plugins and extension points
- *Everything is customizable*

Eclipse Workbench (C++)



Sage2XAIFGraph.cpp 435 6/1/0
Sage2XAIFGraph.hpp 435 6/1/0
testXAIF.cpp 404 3/5/09 2:27 P
XAIFDFSPrint.cpp 383 1/28/09 1
XAIFDFSPrint.hpp 383 1/28/09 1
XAIFGraph2Sage.cpp 390 2/7/0
XAIFGraph2Sage.hpp 383 1/28/
XAIFGraphImpl.cpp 440 6/2/09
XAIFGraphImpl.hpp 441 6/2/09
XAIFGraphInterfaces.hpp 382 1/
XAIFGraphTest.cpp 396 2/24/0
XAIFGraphTraversals.cpp 437 6/
XAIFGraphTraversals.hpp 382 1,
XAIFParser.cpp 382 1/28/09 12:
XAIFParser.hpp 382 1/28/09 12
XAIFParserHandlers.cpp 441 6/2
XAIFParserHandlers.hpp 382 1/2
XAIFParserTest.cpp 286 6/23/0
XAIFVisitors.cpp 435 6/1/09 11:
XAIFVisitors.hpp 435 6/1/09 11
EDGTesting
HelloWorld
Binaries
Includes
HelloWorld.cpp
OpenAnalysis-svn
ROSE
ROSE-build
shapes-gui
UseOA-ROSE
xaifBooster

```
        } else { // end marker
          // Remove original statement (assuming only one remains;
          // the rest should have been removed during the Sage to XAIF
          // phase).
          if (markedStatement) {
            std::string msunp = markedStatement->unparseToString();
            debugMsg(
                2,
                "Removing statement %s: %s and setting markedStatement to NULL",
                stmtAddress.c_str(), msunp.c_str());
          }
          SgBasicBlock* markedStatementParent = isSgBasicBlock(
              markedStatement->get_parent());
          if (markedStatementParent != NULL) {
            SgStatementPtrList & statementList =
                markedStatementParent->get_statements();
            //statementList.remove(markedStatement); // TO DO: check whether this
            //SHK - Replaced the above statement with this messy loop. Have to ch
            for (SgStatementPtrList::iterator iter = statementList.begin(); iter
                != statementList.end(); iter++) {
              if (*iter == markedStatement) {
                statementList.erase(iter);
                break;
              }
            }

          } else
            pwarning(
```

DFSVisitor_XAIF2Sage::convertFunCall(std::string, SgExp
DFSVisitor_XAIF2Sage::convertFunCall(std::string, SgExp
DFSVisitor_XAIF2Sage::getSymbolFromExpression(SgEx
DFSVisitor_XAIF2Sage::globalScope(SgFile*) : SgGlobal*
DFSVisitor_XAIF2Sage::handleExpression(Expression*) :
DFSVisitor_XAIF2Sage::handleExpressionVertex(Vertex*)
DFSVisitor_XAIF2Sage::handleIntrinsic(Sg_File_Info*, Intr
DFSVisitor_XAIF2Sage::handleVariable(SymbolReference
DFSVisitor_XAIF2Sage::insertAssignment(SgExpression*
DFSVisitor_XAIF2Sage::insertStatement(SgStatement*) : v
DFSVisitor_XAIF2Sage::onEdge(Edge*) : void
DFSVisitor_XAIF2Sage::onFinishElement(XAIFElement*, b
DFSVisitor_XAIF2Sage::onInitialize(XAIFElement*) : void
DFSVisitor_XAIF2Sage::onStartElement(XAIFElement*, bo
DFSVisitor_XAIF2Sage::validElementType(XAIFElement*, s
DFSVisitor_XAIFPrinter::DFSVisitor_XAIFPrinter()
DFSVisitor_XAIFPrinter::DFSVisitor_XAIFPrinter(const ch
DFSVisitor_XAIFPrinter::DFSVisitor_XAIFPrinter(std::strin
DFSVisitor_XAIFPrinter::~DFSVisitor_XAIFPrinter()
DFSVisitor_XAIFPrinter::onEdge(Edge*) : void
DFSVisitor_XAIFPrinter::onFinishElement(XAIFElement*, b
DFSVisitor_XAIFPrinter::onInitialize(XAIFElement*) : void

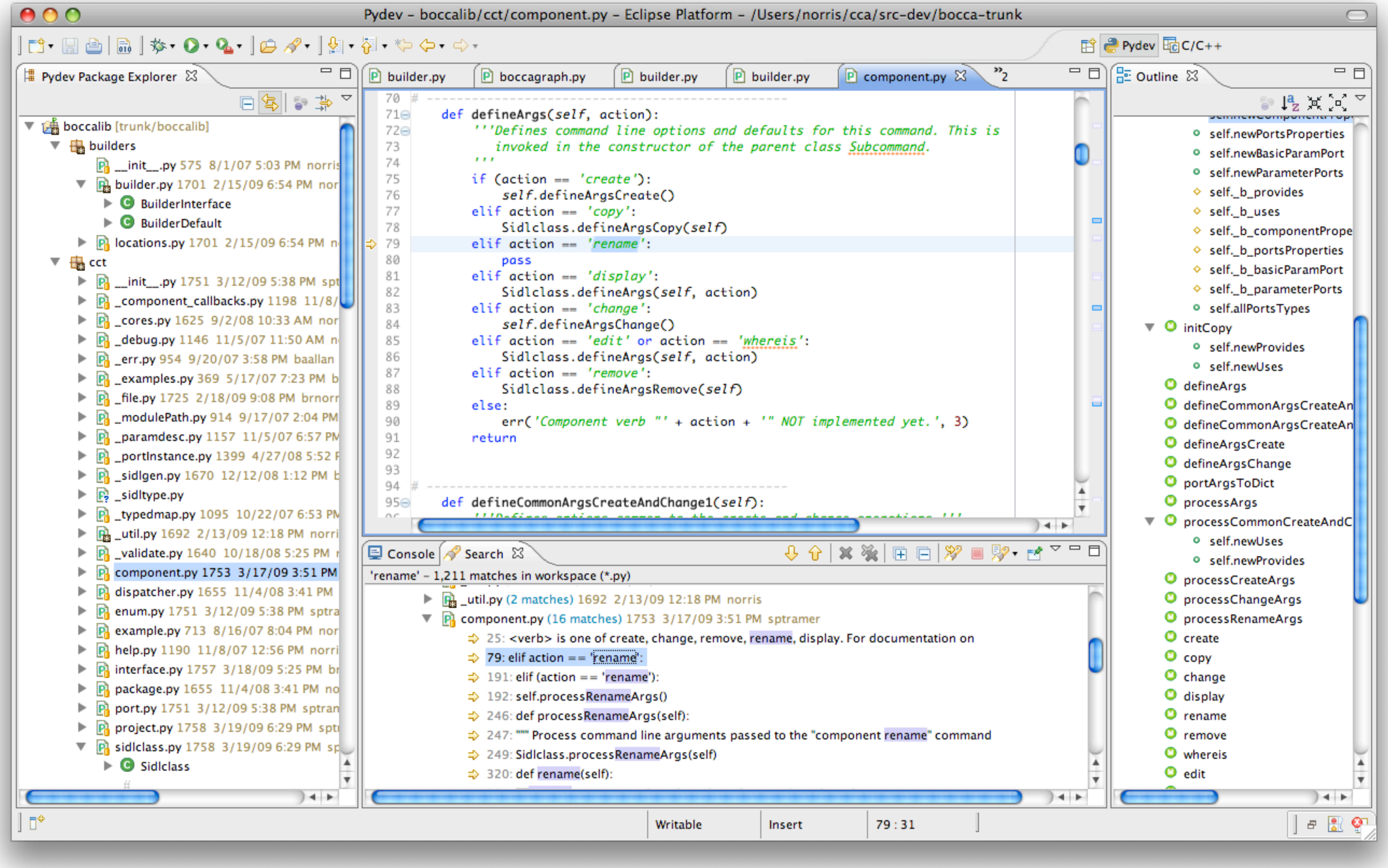
0 errors, 1 warning, 0 others

Description	Resource	Path	Location	Type
⚠ Warnings (1 item)				

Writable | Smart Insert | 256 : 42

http://www.ibm.com/developerworks/opensource/library/os-eclipse-stlcdt/

Eclipse Workbench (Python with Pydev)



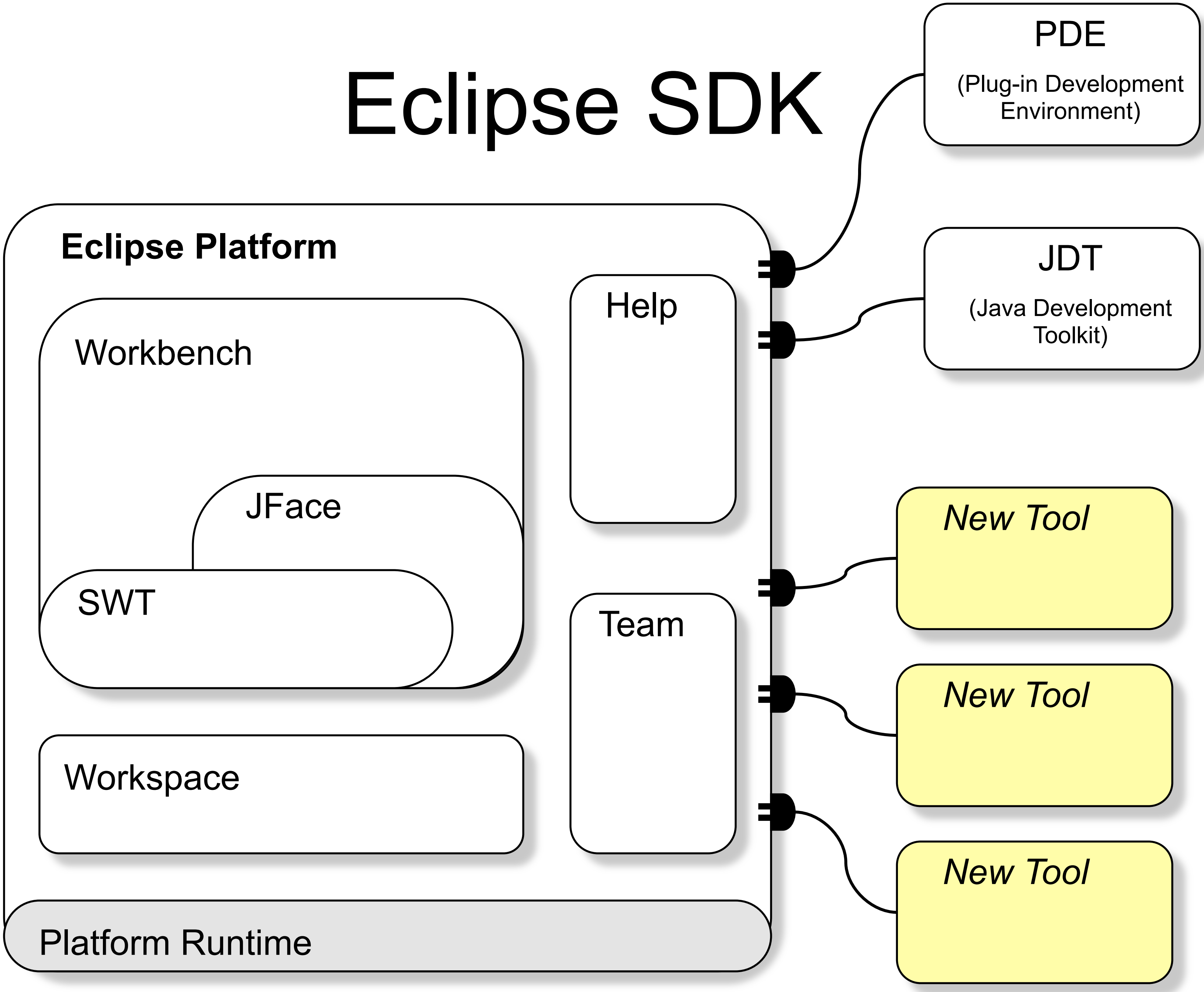
Pydev - boccalib/cct/component.py - Eclipse Platform - /Users/norris/cca/src-dev/bocca-trunk
Pydev
C/C++
Pydev Package Explorer
boccalib [trunk/boccalib]
builders
__init__.py 575 8/1/07 5:03 PM norris
builder.py 1701 2/15/09 6:54 PM nor
BuilderInterface
BuilderDefault
locations.py 1701 2/15/09 6:54 PM n
cct
__init__.py 1751 3/12/09 5:38 PM spt
_component_callbacks.py 1198 11/8/
_cores.py 1625 9/2/08 10:33 AM nor
_debug.py 1146 11/5/07 11:50 AM n
_err.py 954 9/20/07 3:58 PM baallan
_examples.py 369 5/17/07 7:23 PM b
_file.py 1725 2/18/09 9:08 PM brnorr
_modulePath.py 914 9/17/07 2:04 PM
_paramdesc.py 1157 11/5/07 6:57 PM
_portInstance.py 1399 4/27/08 5:52 P
_sidlgen.py 1670 12/12/08 1:12 PM b
_sidltype.py
_typedmap.py 1095 10/22/07 6:53 PM
_util.py 1692 2/13/09 12:18 PM norri
_validate.py 1640 10/18/08 5:25 PM
component.py 1753 3/17/09 3:51 PM
dispatcher.py 1655 11/4/08 3:41 PM
enum.py 1751 3/12/09 5:38 PM sptra
example.py 713 8/16/07 8:04 PM nor
help.py 1190 11/8/07 12:56 PM norri
interface.py 1757 3/18/09 5:25 PM br
package.py 1655 11/4/08 3:41 PM no
port.py 1751 3/12/09 5:38 PM sptran
project.py 1758 3/19/09 6:29 PM spt
sidlclass.py 1758 3/19/09 6:29 PM sp
Sidlclass
builder.py
boccagraph.py
builder.py
builder.py
component.py
»2
Outline
self.newPortsProperties
self.newBasicParamPort
self.newParameterPorts
self._b_provides
self._b_uses
self._b_componentPrope
self._b_portsProperties
self._b_basicParamPort
self._b_parameterPorts
self.allPortsTypes
initCopy
self.newProvides
self.newUses
defineArgs
defineCommonArgsCreateAn
defineCommonArgsCreateAn
defineArgsCreate
defineArgsChange
portArgsToDict
processArgs
processCommonCreateAndC
self.newUses
self.newProvides
processCreateArgs
processChangeArgs
processRenameArgs
create
copy
change
display
rename
remove
whereis
edit
Console
Search
Writable
Insert
79 : 31

```
    # ------------------------------------------------
    def defineArgs(self, action):
        '''Defines command line options and defaults for this command. This is
           invoked in the constructor of the parent class Subcommand.
        '''
        if (action == 'create'):
            self.defineArgsCreate()
        elif action == 'copy':
            Sidlclass.defineArgsCopy(self)
        elif action == 'rename':
            pass
        elif action == 'display':
            Sidlclass.defineArgs(self, action)
        elif action == 'change':
            self.defineArgsChange()
        elif action == 'edit' or action == 'whereis':
            Sidlclass.defineArgs(self, action)
        elif action == 'remove':
            Sidlclass.defineArgsRemove(self)
        else:
            err('Component verb "' + action + '" NOT implemented yet.', 3)
        return

    # ------------------------------------------------
    def defineCommonArgsCreateAndChange1(self):
        '''Defines options common to the create and change operations.'''
```

```
'rename' - 1,211 matches in workspace (*.py)
  _util.py (2 matches) 1692 2/13/09 12:18 PM norris
  component.py (16 matches) 1753 3/17/09 3:51 PM sptramer
    25: <verb> is one of create, change, remove, rename, display. For documentation on
    79: elif action == 'rename':
    191: elif (action == 'rename'):
    192: self.processRenameArgs()
    246: def processRenameArgs(self):
    247: """ Process command line arguments passed to the "component rename" command
    249: Sidlclass.processRenameArgs(self)
    320: def rename(self):
```

Eclipse SDK



Eclipse Platform

Workbench

JFace

SWT

Help

Team

Workspace

Platform Runtime

PDE

(Plug-in Development Environment)

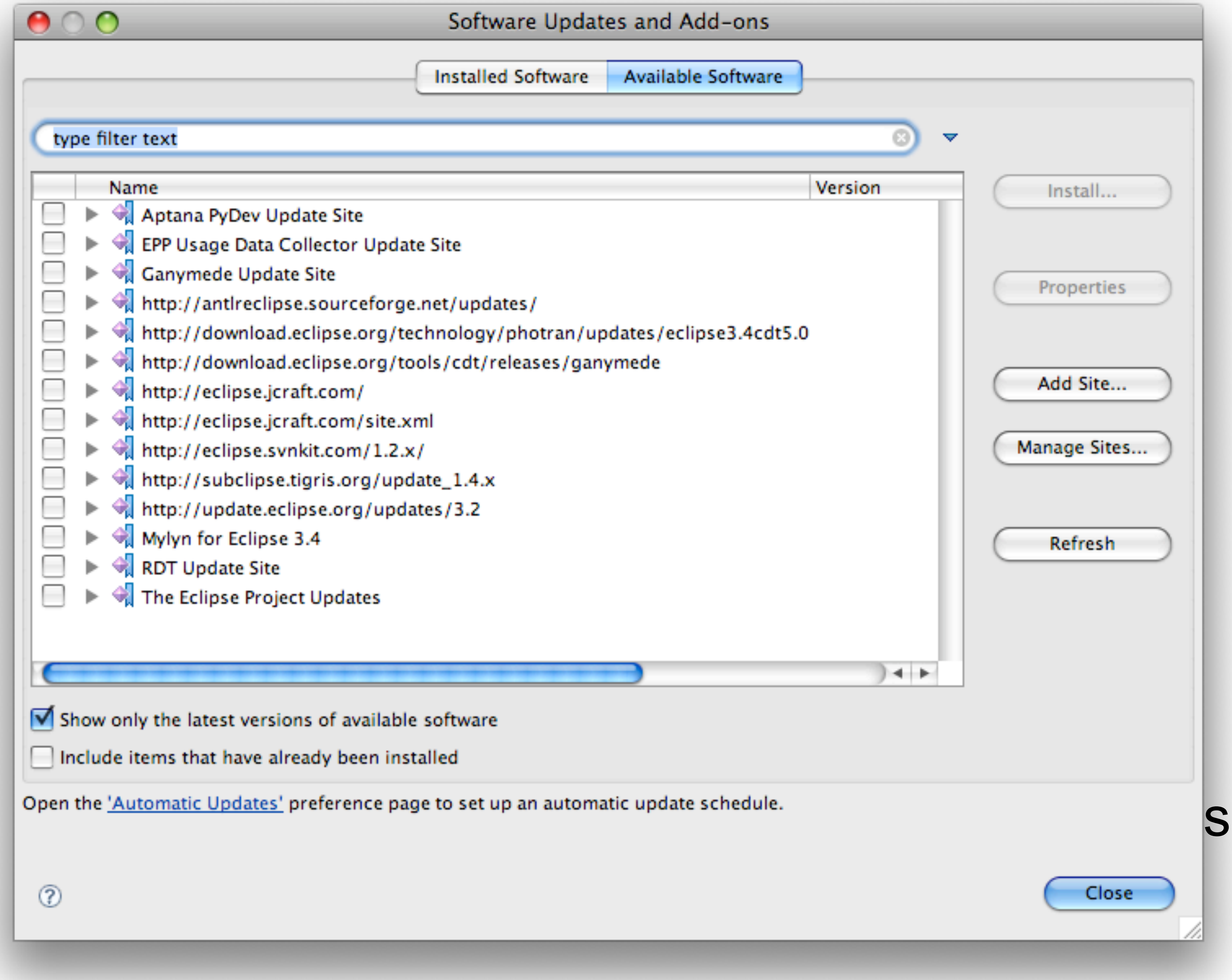
JDT

(Java Development Toolkit)

New Tool

New Tool

New Tool



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	Name	Version
□	Aptana PyDev Update Site	
□	EPP Usage Data Collector Update Site	
□	Ganymede Update Site	
□	http://antlreclipse.sourceforge.net/updates/	
□	http://download.eclipse.org/technology/photran/updates/eclipse3.4cdt5.0	
□	http://download.eclipse.org/tools/cdt/releases/ganymede	
□	http://eclipse.jcraft.com/	
□	http://eclipse.jcraft.com/site.xml	
□	http://eclipse.svnkit.com/1.2.x/	
□	http://subclipse.tigris.org/update_1.4.x	
□	http://update.eclipse.org/updates/3.2	
□	Mylyn for Eclipse 3.4	
□	RDT Update Site	
□	The Eclipse Project Updates	

☑ Show only the latest versions of available software

□ Include items that have already been installed

Open the 'Automatic Updates' preference page to set up an automatic update schedule.

S

What languages are available?

- Java; comes with the standard Eclipse distribution, no extra plugins needed
- C/C++ (CDT), must be installed separately, update site available
- Fortran: see the Photran project
  - http://www.eclipse.org/photran/ (must download, no update site)
- Python: see the PyDEV project (free + nonfree extensions)
  - http://pydev.sourceforge.net/
- Future work related to interpreted languages in general, see the Dynamic Language Toolkit (DTK):
  - http://www.eclipse.org/proposals/dltk/
- Anything else: searching eclipse.org or google usually gives good results (e.g., google for "*<my favorite thing>* Eclipse plugin")

Debugging

- Nice overview at:

http://www.ibm.com/developerworks/library/os-ecbug/

Some Version Control Plugins

- CVS (supported with standard Eclipse distribution)
- Subversion
  - http://subclipse.tigris.org/
- Visual SourceSafe
  - http://sourceforge.net/projects/vssplugin/

Eclipse Tutorials

- Eclipse website
- IBM documentation
- http://www.horstmann.com/bigj/help/eclipse/ (general intro)
- https://eclipse-tutorial.dev.java.net/ (for Java application development)
- http://www.cs.umanitoba.ca/~eclipse/ (getting started and working with the SWT)