AlphaZ has been only tested on Linux 64 bits and MacOs.

Eclipse Setup Using Plugins

For the newcomers (for others some of these steps are redundant):

1. AlphaZ requires at least Java 7 (Java 8 is also supported). If Java 7 is not installed on your machine, install Java 7 from http://www.oracle.com/technetwork/java/javase/downloads/index-jsp-138363.html.
2. Download Eclipse (Neon - 4.6.1) at http://www.eclipse.org/downloads/ (Eclipse Classic for your platform)
3. Launch Eclipse
4. Go to Help → Install New Software
5. In “Work with” form, copy/paste the following URL: https://www.cs.colostate.edu/AlphaZ/update-sites/neon/site.xml (Neon - 4.6.1 is the current version of Eclipse. For older versions of Eclipse use URL: https://www.cs.colostate.edu/AlphaZ/update-sites/<target>/site.xml where <target> is code name of the Eclipse distribution).
6. You should see several items including “AlphaZ environment”.
7. Install “AlphaZ Bundle” (inside the “AlphaZ environment” category).
8. Hit next until Eclipse start installing the bundle.
9. Restart Eclipse.
10. To be able to check out project through svn with eclipse, please install the corresponding subeclipse plugins using update-site https://dl.bintray.com/subclipse/releases/subclipse/4.2.x.

Since AlphaZ is still in very active development, we have activated automatic update of AlphaZ bundle.If you met some problems while using AlphaZ, please refer to the common pitfall section. We described some common problems that users met, and provided possible solutions.

Eclipse Setup for External Environment

Bundles for other environments are available under
http://www.cs.colostate.edu/AlphaZ/bundles/.
Simply download the archive for your OS/architecture and extract its content.
AlphaZ bundle will be also automatically updated.

Eclipse Setup for CSU students

The eclipse environment with all necessary plug-ins is available in the AlphaZ project directory. The following script will start the eclipse with AlphaZ installed.

```
#!/bin/bash

#Path to the eclipse -- should NOT be changed
export ECLIPSE_HOME=/s/chopin/e/proj/AlphaZ/BinTree/eclipse-alphaz-
bundle/eclipse/
```

```
#Path to the java used -- should NOT be changed
export JAVA_HOME=/usr/local/java64/bin/
export PATH=${JAVA_HOME}:${PATH}

${ECLIPSE_HOME}/eclipse $* -vmargs -d64 -Xms256m -Xmx1024m &
```

Save the above script as `eclipse.custom` on your home directory (~/eclipse.custom)
Don't forget to give execute permission to the script.

Checking out Sample Project

To get started with AlphaZ, a Java plug-in project with examples can be checked out from our repository.

- Select "`File→New→Other`" from the menu and select "`Checkout Projects from SVN`"
- Select "`Create a new repository location`" and click "`Next`"
- Use `http://www.cs.colostate.edu/AlphaZsvn/Development` as the URL and click "`Next`"
- Select "`Alphabets`" and click "`Finish`"

What's Inside

Inside the `Alphabets` project, you will find two directories, `AlphabetsExamples` and `CommandScripts`. Alphabets is the programming language for programming in equations (with extension .ab), and CompilerScripts (.cs) are script files to use the scripting interface of AlphaZ.

Try running `BasicScript.cs` in the `CommandScripts` directory to make sure that the system is working on your machine.

`ReadAlphabets` loads .ab files and parses it to get a `Program` object. Objects returned by commands and strings/integers can be stored in untyped variables.

`Show`, `AShow`, `PrintAST` are all commands to print out the program in different formats.

`generateXXX` commands takes the program and generates executable C code.

Common Pitfalls

You may have some error connecting to the repository through eclipse

- When your connection gets lost while trying to connect:
  - Go to "`Preferences→Team→SVN`" and change the SVN interface to "`SVNKit(Pure Java)`" and try again.
  - The default SVN interface uses JNI bindings and it may not work depending on the machine. Pure Java version should.

Check the following if something does not work

- AlphaZ requires JRE1.7. Please make sure you have the Java 7 installed on your machine, and it is the default java version used by eclipse. Otherwise, the plugins installed will not be activated. To be sure that your eclipse is using Java 7, you can start your eclipse with explicitly specified Java path. For example: ./eclipse -vm /home/yun/yun_temp/jdk1.7.0/bin/java .
- AlphaZ is updated frequently, if you are using it on an external machine, run the update script
- Most of the machines in the department is 64bit linux, but some are 32bit. You won't be able to start eclipse in those machines.
- Eclipse may not reflect some changes try
    - Cleaning the project
    - Starting eclipse with -clean option so that plug-ins are refreshed

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Last update: **2016/12/07 09:53**