Kepler Installation Instructions

Windows Instructions:

- **Download Ptolemy II**: Kepler Development is based on the Ptolemy II system and framework. The following instructions give an outline of the Ptolemy II downloading process:-

  - Ptolemy II system's detailed information can be found at the following link:-
    http://ptolemy.eecs.berkeley.edu/ptolemyII/

  - To be able to rebuild from source, download the Ptolemy II source only:-
    http://ptolemy.eecs.berkeley.edu/ptolemyII/ptII4.0/ptII4.0.1.src.tar.gz

  - Make sure your system has JKD 1.4.0 or later installed as well as the jdk bin directory has been included in your path.

  - Since we are rebuilding from source, we need to install cygwin (preferably cygwinBasic), which consists of tools necessary to compile and configure Ptolemy II.

    Download and execute `cygwinBasic.exe` (11.1 Mb)

    Follow the detailed cygwin Installation Instructions found at the Ptolemy website: -
    http://ptolemy.eecs.berkeley.edu/ptolemyII/ptII4.0/cygwin.htm

    Note: - You can also get the latest cygwin version at
    `http://sources.redhat.com/cygwin/`

  - After installing Ptolemy II 4.0, cygwin and JDK 1.4.0(if required) start up the Cygwin Bash Shell.

  - Before we compile and configure Ptolemy we must set the value of the environment variable PTII with the name of the directory where Ptolemy II has been installed.
    (For e.g. PTII = C:\Project\Ptolemy\ptII4.0.1)

  - After setting the variable PTII to the Ptolemy destination, in the cygwin bash shell cd to the above Ptolemy directory.
    >cd "$PTII"

  - Run `rm -f config.*`

- Run `./configure`
- Run `make fast all`
- Now type `vergil` (or `$PTII/bin/vergil` if you did not set your path) in the cygwin Bash window and the Ptolemy II GUI should start up.

Note: - For further detailed installation instructions/ troubleshooting kindly follow the Ptolemy II source download and instructions link:- http://ptolemy.eecs.berkeley.edu/ptolemyII/ptII4.0/ptII/doc/install.htm

(*Optional*):- Ant , a java based build tool, is faster than MAKE and has more debug options. It can be downloaded at the following link:- http://ant.apache.org/bindownload.cgi

After Ant installation we can also build ptolemy.jar using ant:-
>cd "$PTII"
>ant –f build.xml

- **CVS Access Account**: To access CVS Repository for Kepler's code, you'll need a CVS access account on cvs.ecoinformatics.org, which are available by writing a brief email request to pmc@ecoinformatics.org. Write access to the repository is only available to project members. For further information in this regards visit the Kepler Project website www.kepler.ecoinformatics.org

  Once CVS Account username and password is available, one can log into their account using a Secure Shell (Only ssh v.2 is supported on this server). It is recommended that a user changes his given password by typing "passwd" after logging in for the first time.

  (*Optional*): To simply test your username and password one can create a PuTTY Session. Download PuTTY at http://www.putty.nl/ and connect to the "ecoinformatics.org" SSH server. Make sure the Protocol is SSH and Preferred Protocol Version is 2.

- **Install TortoiseCVS**: To set up CVS under Windows it is recommended by Kepler group that TortoiseCVS 1.4.5 or higher is used.

  Download the latest version of TortoiseCVS at:- http://www.tortoisecvs.org/download.shtml

  SSH is transparently supported in TortoiseCVS (after release of 0.49). TortoiseCVS will attempt to connect to the server via PuTTY if you checkout a CVSROOT using "Secure Shell (: ext :)"protocol. Make sure that TortoiseCVS settings are set to use SSH v2.0. Right Click and go to CVS Preferences

Tools Set SSH Parameters to -2 or create a PuTTY session and change the SSH configuration settings accordingly.

Note: - For further detailed instruction on TortoiseCVS installation / troubleshooting issues visit the TortoiseCVS website at the following link http://www.tortoisecvs.org/support.shtml

- **Checkout Kepler:** As a final step now we need to check out a copy of Kepler's source code and document repositories in order to gain access as well as contribute to the Kepler Project Development.
  - Make an empty New Folder (e.g. "Project") in the directory where Kepler code is supposed to be checked out to.
  - Inside the new folder, right click and click on "CVS checkout" which brings up the Checkout Module.
  - Enter the following information in the above Module Dialog:-

CVSROOT	: ext:username@cvs.ecoinformatics.org:/cvs
Protocol	Secure shell (: ext :)
Server	cvs.ecoinformatics.org
Repository Folder	/cvs
Module	kepler

  - Click on Fetch list button and once all the files and depositories of Kepler Project have been checked out successfully, click ok.

The above process should successfully make a new directory namely "Kepler" containing all the source code and document depositories required. One can perform normal CVS functions on the above files/directories by right clicking and selecting the desired operation such as CVS checkout / update etc.

- **Run Kepler** : Now that we have the source code for Kepler project we can run it in cygwin Bash Shell
  - First set the value of the environment variable "KEPLER" to be equal to the location of the directory where kepler has been checked out.
    For e.g.:- KEPLER= C:\Project\kepler
    (Be careful when dealing with directories with spaces in name in the HOME environment, cygwin may not cope with that.)

- > cd to the Kepler Home Directory

- > ant run (builds , installs and runs the application)
  (One can also do ant run-dev to run kepler without jarring anything for code development)

The above run command should bring up the Kepler GUI and contains links to ready to run workflows as well.

(*Optional*):- A better way to organize the above Ptolemy and Kepler Files would be to make one single directory called "Project" and create its two subdirectories namely "Ptolemy" and "Kepler". Remember to change the environment variables for both PTII and KEPLER in case you do the above changes.

Linux and MacOSX Instructions:

- **Download Ptolemy II**: Kepler Development is based on the Ptolemy II system and framework. The following instructions give an outline of the Ptolemy II downloading process:-

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    http://ptolemy.eecs.berkeley.edu/ptolemyII/

  - To be able to rebuild from source, download the Ptolemy II source only:-
    http://ptolemy.eecs.berkeley.edu/ptolemyII/ptII4.0/ptII4.0.1.src.tar.gz

  - Make sure your system has JKD 1.4.0 or later installed as well as the jdk bin directory has been included in your path.

  - Now we need to set the PTII environment variable to the location of the Ptolemy home directory.
    > bash
    ```
    > export PTII=c:/Ptolemy/ptII4.0.1
    ```
    > csh
    > setenv PTII /users/yourname/ptII

  - After setting the variable PTII to the Ptolemy destination, cd to the above Ptolemy directory.
    >cd "$PTII"

- Run `rm -f config.*`
- Run `./configure`
- Run `make fast all`
- Now type `vergil` (or `$PTII/bin/vergil` if you did not set your path) in the cygwin Bash window and the Ptolemy II GUI should start up.

Note: - For further detailed installation instructions/ troubleshooting kindly follow the Ptolemy II source download and instructions link:-
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  Once CVS Account username and password is available, one can log into their account using a Secure Shell (Only ssh v.2 is supported on this server). It is recommended that a user changes his given password by typing "passwd" after logging in for the first time.

- **Checkout Kepler:** As a final step now we need to check out a copy of Kepler's source code and document repositories in order to gain access as well as contribute to the Kepler Project Development.

  One can find the most recent version of CVS at https://www.cvshome.org/

  - Tell cvs which server you want to connect, under which identity, and what CVS head you want in order to checkout the source code.

    Firstly define CVSROOT variable as follows:-
    > export CVS_RSH=ssh2

> export CVSROOT=:ext:usernmae@cvs.ecoinformatics.org:/cvs

Now we login into the server and checkout the “Kepler” module.
> cvs login
> cvs checkout kepler

The above process should successfully make a new directory namely “Kepler” containing all the source code and document depositories required. One can perform normal CVS functions on the above files/directories and perform the desired operation such as CVS checkout / update etc.

- **Run Kepler** : Now that we have the source code for Kepler project we can run the Kepler application.
  - First set the value of the environment variable “KEPLER” to be equal to the location of the directory where kepler has been checked out. For e.g.:- KEPLER= C:\Project\kepler
  - > cd to the Kepler Home Directory
  - > ant run (builds , installs and runs the application)
    (One can also do ant run-dev to run kepler without jarring anything for code development)

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