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/

  - 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/ptII5.0/cygwin.htm

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

  - **Checking Out the Ptolemy Tree**:-

    The Ptolemy tree needs to be checked out via the following procedure. In cygwin, type in the following:-

    > cvs -d :pserver:ptdevel@gigasource.eecs.berkeley.edu:/home/cvs/cvsanon login
    > password: pt!rules
    > cvs -d :pserver:ptdevel@gigasource.eecs.berkeley.edu:/home/cvs/cvsanon co ptII

    The above should update & make a ptII folder in the current Ptolemy home directory (For e.g.: C:\Project\Ptolemy\ptII)

- 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\ptII)

- **Using Ant:** 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

  It is advised for Kepler Users and Developers to download and use "Ant" in order to build Kepler as well as Ptolemy sources in future.

- **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.

- (*Optional)* **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:** 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.

  Kepler Checkout Using TortoiseCVS:

  - 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.

  Kepler Checkout Using Cygwin

  - Open up cygwin bash shell and type the following
    >bash
    >export CVS_RSH=ssh
    >cvs –d:ext:cvs-username@ecoinformatics.org:/cvs co kepler
    >Enter cvs-password

    Note: (It is advised to setup your cygwin for ssh access .)

  Either of the above two procedures (using TortoiseCVS or cygwin) 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 such as CVS checkout / update etc.

- **Running Kepler:** After successfully checking out both Ptolemy as well as Kepler we now need to build Ptolemy source files and run Kepler.

  - 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.)

- Type the following:-
  > cd "$KEPLER"
  > ant full-clean ptolemy run-dev

  The above command firstly fully cleans both Kepler as well as Ptolemy builds. Secondly it builds Ptolemy and lastly it runs Kepler without jarring any files for development purposes.

  The Kepler GUI window should pop up after the above command and this indicates that Kepler has been successfully installed on your system.

  Note: - For jar file creation in Kepler run, type the following:-
  > ant full-clean ptolemy run

  More specific tasks

> ant full-clean	<to clean Ptolemy, Kepler builds>
> ant Ptolemy	<to build Ptolemy>
> ant compile	<to compile Kepler>
> ant run	<to run Kepler>
> ant run-dev	<to run Kepler for development purposes>
> ant vergil	<to run Ptolemy>
> ant javadoc	<to create javadocs>

(*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.

- **Kepler Tutorials:** It would be helpful for beginners to perform various simple exercises given on Kepler Website at the following link: http://kepler-project.org/Wiki.jsp?page=KeplerDevelopersTutorial

  For further information / troubleshooting visit the Kepler Project website at the following link: www.kepler.ecoinformatics.org

Linux 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/

  - 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=/users/yourname/Ptolemy/ptII
    ```
    > csh
    > setenv PTII /users/yourname/Ptolemy/ptII

  - **Checking Out the Ptolemy Tree**:-

    The Ptolemy tree needs to be checked out via the following procedure:-
    > cvs -d :pserver:ptdevel@gigasource.eecs.berkeley.edu:/home/cvs/cvsanon login
    > password: pt!rules
    > cvs –d :pserver:ptdevel@gigasource.eecs.berkeley.edu:/home/cvs/cvsanon co ptII

- **Installing Ant**:- Linux should have Ant pre-installed already.
  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

- **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.

- **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.

- **Running Kepler:** After successfully checking out both Ptolemy as well as Kepler (and setting up the KEPLER,PTII environment variables), we now need to build source files and run Kepler.

  - 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.)

  - Type the following:-
    > cd "$KEPLER"
    > ant full-clean ptolemy run-dev

    The above command firstly fully cleans both Kepler as well as Ptolemy builds. Secondly it builds Ptolemy and lastly it runs Kepler without jarring any files for development purposes.

The Kepler GUI window should pop up after the above command and this indicates that Kepler has been successfully installed on your system.

Note: - For jar file creation in Kepler run, type the following:-
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> ant vergil	<to run Ptolemy>
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(*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.

- **Kepler Tutorials:** It would be helpful for beginners to perform various simple exercises given on Kepler Website at the following link: http://kepler-project.org/Wiki.jsp?page=KeplerDevelopersTutorial

  For further information visit the Kepler Project website at the following link: www.kepler.ecoinformatics.org