

# THE INSTALLATION PROCEDURE FOR CEAD

The CEAD is embedded into the PHENIX package, which is an international collaboration program. More information regarding PHENIX is available at <http://www.phenix-online.org/>

The following describe the procedures to install the CEAD on you Linux operation system.

## 1. Basic

1.1 Currently, the following Redhat Linux platforms are tested for PHENIX, and therefore supported for the distribution:

- Redhat 8.0
- Redhat 9.0
- Redhat Enterprise Workstation 3 [+/- x86\_64]
- Redhat Enterprise Server 4.2 [+/- x86\_64]
- Fedora Core 3 [+/- x86\_64]
- Fedora Core 5 [+/- x86\_64]

Redhat versions prior to 8.0 are not supported.

1.2 All of the following installation is based on an assumption that you want to install the CEAD under the directory of “~/”

1.3 fit2d only support Intel Pentiums probably!

## 2. Install the PHENIX platform

1.1 go to <http://www.phenix-online.org/download/index.html> and click the “[Request download instructions](#)” for the download permission.

1.2 Download the PHENIX by clicking the “[Download](#)” at the website of <http://www.phenixonline.org/download/index.html>.

1.3 Install the PHENIX.

You should obtain the latest distribution of PHENIX including the binary bundles specific for your machine architectures.

1.3.1 Unpack the tar file:

```
tar xvf phenix-installer-<version>-<platform>.tar
```

1.3.2 Change to the installer directory:

```
cd phenix-installer-<version>, and find the absolute path of the directory of “~/”
```

1.3.3 Install

Replace the absolute path from 1.3.2 with the <directory > in the following command

```
./install --prefix=<directory>
```

It will make <directory>/phenix-<version> and install there.

Note: <directory> must be an absolute path (i.e. starts with a / by pwd). A relative path starting with ../ will not work correctly.

Installation of the binary version of PHENIX requires no compilation, only the generation of some data files, so you will probably have to wait about 30 minutes for the installation to complete (depending on the performance of your installation platform).

Any question, please refer to “The basic” of PHENIX at <http://www.phenix-online.org/download/documentation/phenix/prerelease/phenix/Basics.html>.

### **3. Install the fit2d**

Assume your computer is working on an Intel processor.

3.1 Go to <http://ftp.esrf.eu/pub/expg/FIT2D/>, and download the latest fit2d version to the following directory “~/fit2d”

3.2 rename the downloaded file, say fit2d\_12\_081\_i686\_linux2.4, as fit2d

3.3 Adding the executable mode by

```
Chmod a+x fit2d
```

3.4 Manually running fit2d.

```
Fit2d -key -nogr
```

Please refer to “How to manually execute fit2d”

### **4. Install the expgui + gsas**

4.1 Go to <http://www.ccp14.ac.uk/solution/gsas/> and download the following to ~/ folder:

```
“LINUX_gsas+expgui.tar.gz”
```

4.2 Go to ~/ and unpack the downloaded file by  
tar xvzf LINUX\_gsas+expgui.tar.gz

### **5. Copy the CEAD programs**

Create a directory ~/phenixrc/tasks/ and copy all of the CEAD programs to it

### **6. Copy all of your raw data files**

6.1 create a directory ~/sandbox

6.2 copy the “inst\_x3a.prm” from ~/gsas/example/ to ~/sandbox/

6.3 Copy the inst\_x3a.prm as “.inst\_x3a.prm” and “.inst\_x3a\_cp.prm” respectively at the same directory

6.4 copy all of your raw data under this folder, or you can make a separate folder to store your raw data, and also you can create new folder to save the final datas

### **7. Update the shell file**

7.1 Assume you are using tcsh shell. If not, change the shell file by

```
Chsh -s /bin/tcsh
```

7.2 Add the following commands into the shell file

```
alias expgui "$HOME/gsas/tcltk84+ $HOME/gsas/expgui/expgui"  
alias phenix1 "source ~/phenix-1.24.1b/phenix_env"  
setenv GSASDIR $HOME/gsas  
setenv PGPLOT_XW_WIDTH 0.75  
setenv PGPLOT_DIR $GSASDIR/pgl  
setenv gsas $GSASDIR  
setenv ATOMDATA $GSASDIR/data/atmdata.dat  
setenv ATMXSECT $GSASDIR/data/atmxsect.dat  
setenv LENPAGE 80  
setenv GSASEXE "$GSASDIR/exe"  
set pgms = `/bin/ls $GSASEXE`  
set history = 100  
setenv upcase $GSASDIR/upcase  
alias count $GSASDIR/count  
setenv FIT2D $HOME/fit2d/
```

## **8. Run the CEAD program**

8.1 Go to ~/sandbox/,

8.2 type in “phenix1” and return

8.3 type in “phenix”, and return