

# Installation guide for GRAPE-6 BLX64 at ESO

This document summarises the installation procedure for drivers and *N*-body code (Starlab) on the PCs in Garching with GRAPE-BLX64 board.

## 1 Preparing PC

The OS installed should be 64-bit Linux with kernel 2.6.18 or 2.6.19 (x86\_64), for example Fedora Core 6. Other kernel versions could also be used, but the instructions provided below may not work in this case.

In order to install driver and software, g++, gcc, g77 and the kernel sources should be installed.

## 2 Compiling and installing the GRAPE software

Obtain g6bx.tar.gz from <http://staff.science.uva.nl/~egaburov/g6bx.tar.gz>, and unpack it in a directory (\$GRAPE\_PATH)

### 2.1 Compiling & installing the device driver

#### Compiling the device driver

As any user:

```
$ cd $GRAPE_PATH/g6bx/pcixmem
$ make clean
$ make
```

#### Installing the device driver

As a superuser:

```
$ csh $GRAPE_PATH/g6bx/pcixmem/install.csh $GRAPE_PATH/g6bx/pcixmem/pcixmem
```

It is important that this is executed every time the PC is rebooted, to make sure that the GRAPE driver is loaded into memory.

### 2.2 Compiling & installing libraries

#### Compiling libraries

As any user:

```
$ cd $GRAPE_PATH/g6bx/lib
$ make libg6bx
$ make libg6bx0
$ cd ../xhibutil
$ make
```

#### Installing libraries

As a superuser:

```
$ cd $GRAPE_PATH/g6bx
$ cp lib/*.a /usr/local/lib
$ cp xhibutil/*.a /usr/local/lib
$ chmod 644 /usr/local/lib/libg6bx* /usr/local/lib/libxhib*.a
```

## 3 Installing Starlab

### 3.1 Global installation

In this case, any user will be able to use GRAPE enabled Starlab without installing it.

Download the latest version of starlab from <http://www.ids.ias.edu/~starlab/download/>. CD to starlab.4.x.x/local and create the file `grape.sh` with the following two lines:

```
GRAPE.LDFLAGS_='-L/usr/local/lib'  
GRAPE.LIBS_='-lg6bx0'
```

CD to starlab-4.x.x folder and execute:

```
$ ./configure --prefix=/usr/local  
$ make  
$ (as root) make install
```

### 3.2 Local installation

The same as above except that the following set of commands should be executed:

```
$ mkdir usr  
$ ./configure --prefix='pwd'/usr  
$ make  
$ make install  
$ export PATH=$PATH:'pwd'/usr/bin
```