Aqua-Sim Installation Guide

Installing the Essential Packages
Before installing Aqua-Sim, you should make sure that your Linux system contains the essential libraries for the installation of ns-allinone-2.30. Usually, it requires gcc/g++ compiler, automake, X11 lib:

```
sudo apt-get update
sudo apt-get install xorg-dev g++ xgraph
```

To make Aqua3D work, some other packages, such as freeglut, GTK+ 2.0 and wxGTK-2.8.11, are also required (All these packages can be installed from synaptic package manager). For more details, please refer to the website of Aqua3D: [http://uwsn.engr.uconn.edu/wiki/index.php?title=Aqua-3D&redirect=no](http://uwsn.engr.uconn.edu/wiki/index.php?title=Aqua-3D&redirect=no)

Installing Aqua-Sim
Create directory (e.g. ~/aqua-sim), move Aqua-Sim-1.0.tgz into directory and extract:

```
~/aqua-sim$ tar xzvf Aqua-Sim-1.0.tgz
~/aqua-sim$ sudo ./install
```

After finishing the installation successfully, add the following environment variable into .bashrc in the directory of your home directory, i.e., ~/.bashrc. Note, that you must substitute “name/aqua-sim” within each path with your Aqua-Sim directory.

```
$ gedit ~/.bashrc

OTCL_LIB=/home/name/aqua-sim/otcl-1.12
NS2_LIB=/home/name/aqua-sim/lib
X11_LIB=/usr/X11R6/lib
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:OTCL_LIB:NS2_LIB:X11_LIB:
$USR_LOCAL_LIB

TCL_LIB=/home/name/aqua-sim/tcl8.4.18/library
USR_LIB=/usr/lib
export TCL_LIBRARY=TCL_LIB:$USR_LIB

XGRAPH=/home/name/aqua-sim/bin:/home/name/aqua-sim/tcl8.4.18/unix:
/home/name/aqua-sim/tk8.4.18/unix:/home/name/aqua-sim/xgraph-12.1/
NS=/home/name/aqua-sim/ns-2.30/
NAM=/home/name/aqua-sim/nam-1.13/
export PATH=$PATH:XGRAPH:NS:NAM
```

Then, you should restart the terminal or use “source .bashrc” to activate the new environment variables. Now, you can input ns in the command line and “%” will appear if Aqua-Sim installation is successful:

```
$ ns
%
After quitting ns by inputting exit, you can enter directory “~/aqua-sim/ns-2.30/underwatersensor/uw_tcl/” and test underwatersensor module via running the scripts in this directory. For example:

$ ns vbf_example_5.tcl

Also, you can enjoy the amazing Aqua-3D via the following command now.

$aqua3d &

Using the GUI, you can play /aqua3d-1.0.1/trace_example/general.nam

**Trouble shooting**

Some original parts of ns-allinone-2.30 might not be installed successfully to certain compiler. For example, otcl-1.12 fails if gcc version is 4.4. For such errors of original ns2 package, please search the corresponding solutions to ns-2.30. Usually, you can solve the problem. For errors about Aqua-3D, please refer to our website [http://uwsn.engr.uconn.edu/wiki/index.php?title=Aqua-3D&redirect=no](http://uwsn.engr.uconn.edu/wiki/index.php?title=Aqua-3D&redirect=no) to check the required lib packages. If it still does not work, please contact us.