
Installation of HARK-ROS

(Optional HARK package for ROS users)

HARK team

Installation : Overview

■ Pre-requisites

■ ROS

- <http://www.ros.org/>
- Only C-turtle is supported by HARK-ROS debian packages.
- HARK-ROS also works with box-turtle by source compilation
- Required packages : ros-cturtle-ros, ros-cturtle-driver-common

■ HARK-related ROS packages

- <http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos/>
- Required packages : hark-ros-stacks

■ HARK

- <http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos/>
- Required packages : harkfd, hark-ros

Here, we assume you are using Ubuntu 10.04 (Lucid)

Installation from pre-compiled binaries

❑ STEP1 : ROS installation

- Follow the page : <http://www.ros.org/wiki/cturtle/Installation/Ubuntu>

```
$ sudo sh -c 'echo "deb http://code.ros.org/packages/ros/ubuntu lucid main" > /etc/apt/sources.list.d/ros-latest.list'
$ wget http://code.ros.org/packages/ros.key -O - | sudo apt-key add -
$ sudo apt-get update
$ sudo apt-get install ros-cturtle-ros
$ sudo apt-get install ros-cturtle-driver-common
```

ros-cturtle-driver-common is additionally required for the dynamic reconfigure.

❑ STEP2 : HARK and HARK-related ROS package installation

```
$ sudo sh -c 'echo "deb http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos lucid non-free¥ndeb-src
http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos lucid non-free" > /etc/apt/sources.list.d/hark.list'
$ wget http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos/public.gpg -O - | sudo apt-key add -
$ sudo apt-get update
$ sudo apt-get install hark-ros-stacks
$ sudo apt-get install harkfd hark-ros
```

Installation from source compilation

❑ Source compilation

■ Note :

For HARK module developpers, source compilation of your new modules is required.

■ ROS version :

Source compilation supports not only Cturtle but Box-turtle.

■ Distribution :

Ubuntu other than 10.04 (later than 9.04) may be supported.(We checked it locally.)

❑ STEP1 : ROS installation

■ Follow the page : <http://www.ros.org/wiki/cturtle/Installation/Ubuntu>

```
$ sudo sh -c 'echo "deb http://code.ros.org/packages/ros/ubuntu lucid main" > /etc/apt/sources.list.d/ros-latest.list'
$ wget http://code.ros.org/packages/ros.key -O - | sudo apt-key add -
$ sudo apt-get update
$ sudo apt-get install ros-cturtle-ros
$ sudo apt-get install ros-cturtle-driver-common
```

ros-cturtle-driver-common is additionally required for the dynamic reconfigure.

Installation from source compilation

❑ STEP2 : HARK-related ROS package installation

- **Setup your local ROS package directory** ("~/ros" in the following description).

```
$ mkdir ~/ros
$ cp /opt/ros/turtle/setup.sh ~/ros
$ sh -c 'echo "export ROS_PACKAGE_PATH=${ROS_PACKAGE_PATH}:${HOME}/ros" >> ~/ros/setup.sh'
$ sh -c 'echo "source ~/ros/setup.sh" >> ~/.bashrc'
$ . ~/.bashrc
```

- **Make a directory for installing hark-ros-stacks**

```
$ mkdir ~/ros/hark_ros_stacks
$ cd ~/ros/hark_ros_stacks
```

- **HARK repository and gpg-key settings**

```
$ sudo sh -c 'echo "deb http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos lucid non-free¥ndeb-src
http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos lucid non-free" > /etc/apt/sources.list.d/hark.list'
$ wget http://winnie.kuis.kyoto-u.ac.jp/HARK/harkrepos/public.gpg -O - | sudo apt-key add -
$ sudo apt-get update
```

Installation from source compilation

❑ STEP2 : HARK-related ROS package installation : Cont'd

■ Download and make the original source files

```
$ apt-get source hark-ros-stacks  
$ cd ~/ros/hark_ros_stacks/hark-ros-stacks-*.*..*  
$ ./make-all-packages.sh
```

The ".*.*" describes the package version.

You can develop your own HARK-related ROS nodes in "~/ros/hark_ros_stacks/".

❑ STEP3 : harkfd installation (from pre-compiled binaries)

```
$ sudo apt-get install harkfd
```

❑ STEP4 : hark-ros installation (from source compilation)

■ Move to your preferred directory to download source codes.

```
$ mkdir ${HOME}/YOUR_HARK_DOWNLOAD_DIR  
$ cd ${HOME}/YOUR_HARK_DOWNLOAD_DIR
```

Installation from source compilation

❑ **STEP4 : hark-ros installation** (from source compilation) : **Cont'd**

■ **Download source codes.**

```
$ apt-get source harkfd  
$ apt-get source hark-ros
```

■ **Compile and install the source codes.**

```
$ cd hark-ros-*.*.*.  
$ ./configure --prefix=/usr --with-hark-inc=${HOME}/YOUR_HARK_DOWNLOAD_DIR/harkfd-*.*/include/ --enable-ros;  
$ make clean; make ; sudo make install;
```

The "*.*.*" describes the package version.

Here, we need header files of harkfd with --with-hark-inc option.

Installation final check

STEP3 : Checking the system

Check if the package is correctly installed on HARK (flowdesigner)

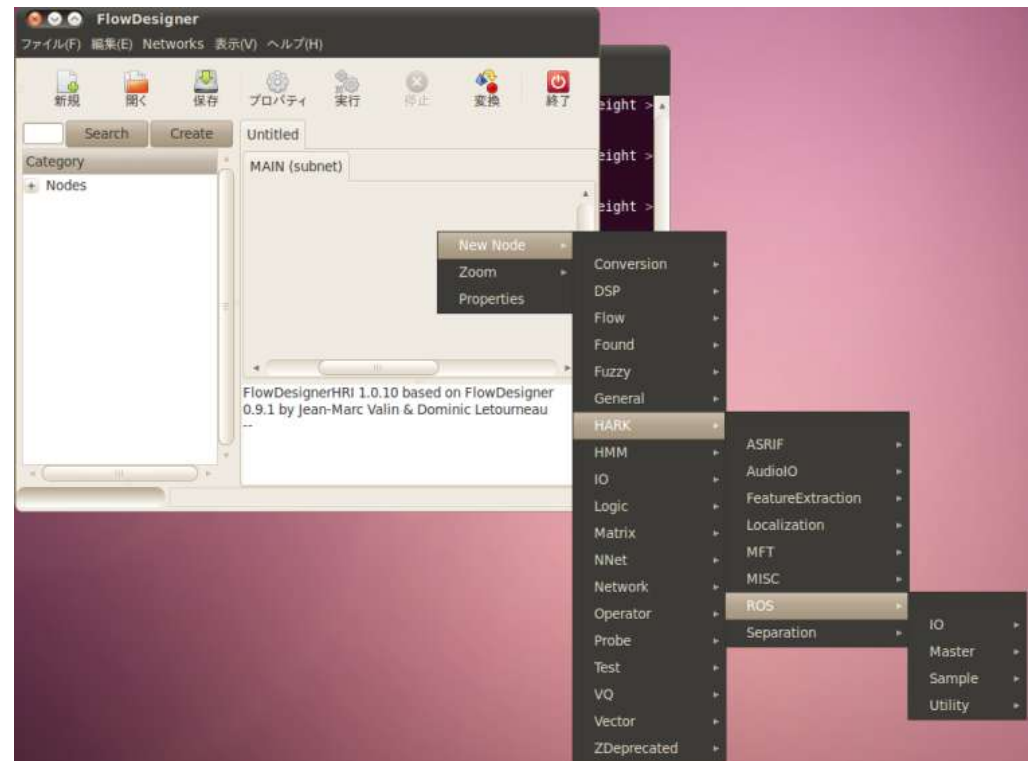
```
% flowdesigner
```

```
UINodeRepository::Scan()
```

```
Scanning def /usr/lib/flowdesigner/toolbox
```

```
done loading def files
```

If you see some ROS related error here, some packages may not be correctly installed.



You can find the HARK-ROS modules in
New Node > HARK > ROS .