

ROS-SDK

Installing ROS Packages

“ Tip

Supported ROS versions:

Ubuntu 20.04

- ROS1: Noetic
- ROS2: Foxy, Galactic

Ubuntu 22.04

- ROS2: Humble, Iron

Note, Ubuntu 18.04 version is not supported. Use docker to run a newer Ubuntu if you just have to.

“ **Warning** Note, before downloading the package, you need to have ROS installed and source the version you need to use. Otherwise, the downloaded package will **not be usable**.

In the path where you want to install the SDK, open the terminal and enter the following command:

```
wget -O hextool.bash https://ros.dl.hexmove.cn/ros.dl/hextool.bash && bash hextool.bash
```

“ **Tip** To prevent typos when typing commands, it is recommended to use the browser that comes with Ubuntu to open this website and copy the command from the browser to the terminal.

This is an EXAMPLE, installing the orcs-diff sdk.

PLEASE SELECT the correct SDK according to what you have purchased.

- Tool selection, choose `1: Download SDK`

```
2024-10-23 21:28:14 (136 KB/s) - '/tmp/hexmove/hex-tool/hex-tool' saved [626036
/6260368]

Setting language to en-US because LANG=en_US.UTF-8

Hello! hex-tool is a command line tool developed by HexMove.
It is mainly used to facilitate the installation of SDKs and other tools.
The tool supports skipping compilation tests, directly specifying the install
ion of a certain SDK, etc.
(especially convenient for automatic environments such as docker).
If you are interested, please refer to the comments in the bash script.

DISCLAIMER: Docs to modify the script are provided as is.
You can modify it as you like, but there is no guarantee that it will work as
xpected.

Downloading SDK meta information from the Internet...

Choose operation
Type Q/q to quit.
1) Install SDK
2) Install a single package
3) Force add hexmove apt source
```

- SDK selection, choose the SDK you want to download. Please select according to the product you actually purchased. Here is an example with ORCS-MCNM.

```
Downloading SDK meta information from the Internet...

Choose operation
Type Q/q to quit.
1) Install SDK
2) Install a single package
3) Force add hexmove apt source
1

Please choose the product category you brought:
Type Q/q to quit.
0) ARK
   Contains: ARK-MINI, ARK
1) HAMMER
   Contains: HAMMER-80
2) TRIGGER
   Contains: FIBOT, TRIGGER-A, TRIGGER-X
3) RAY
   Contains: RAY
4) NEOS
   Contains: NEOS
5) ORCS
   Contains: ORCS-DIFF, ORCS-MCNM-PRO, ORCS-MCNM, ORCS-MINI
```

```

    Contains: ARK-MINI, ARK
1) HAMMER
    Contains: HAMMER-80
2) TRIGGER
    Contains: FIBOT, TRIGGER-A, TRIGGER-X
3) RAY
    Contains: RAY
4) NEOS
    Contains: NEOS
5) ORCS
    Contains: ORCS-DIFF, ORCS-MCNM-PRO, ORCS-MCNM, ORCS-MINI
5

Please choose SDK to install:
Type Q/q to quit.
5) ORCS-DIFF
    ROS Dev kit for the ORCS-DIFF Robot, chassis only
6) ORCS-MCNM-PRO
    ROS Dev kit for the ORCS-MCNM-PRO Robot, chassis only
7) ORCS-MCNM
    ROS Dev kit for the ORCS-MCNM Robot, chassis only
8) ORCS-MINI
    ROS Dev kit for the ORCS-MINI Robot, chassis only
7

```

- Confirm the location of the new folder is correct

```

3) RAY
    Contains: RAY
4) NEOS
    Contains: NEOS
5) ORCS
    Contains: ORCS-DIFF, ORCS-MCNM-PRO, ORCS-MCNM, ORCS-MINI
5

Please choose SDK to install:
Type Q/q to quit.
5) ORCS-DIFF
    ROS Dev kit for the ORCS-DIFF Robot, chassis only
6) ORCS-MCNM-PRO
    ROS Dev kit for the ORCS-MCNM-PRO Robot, chassis only
7) ORCS-MCNM
    ROS Dev kit for the ORCS-MCNM Robot, chassis only
8) ORCS-MINI
    ROS Dev kit for the ORCS-MINI Robot, chassis only
7
hexmove-apt-source-exists
Confirm to install SDK sdk_orcs_mcnm_ws? This will create a new directory sdk_
cs_mcnm_ws in the current directory /home/kisonhe/Desktop.
Type Y/y to confirm, N/n to reject, Q/q to quit:

```

- Enter the password to complete the installation(because script needs to run things like apt-get install xxx). Script will do compile test.

```
[100%] Linking CXX executable /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/devel/lib/pkg_vehicle/xnode_vehicle
[100%] Built target xnode_vehicle
Base path: /home/kisonhe/Desktop/sdk_orcs_mcnm_ws
Source space: /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/src
Build space: /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/build
Devel space: /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/devel
Install space: /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/install
Creating symlink "/home/kisonhe/Desktop/sdk_orcs_mcnm_ws/src/CMakeLists.txt" pointing to "/opt/ros/noetic/share/catkin/cmake/toplevel.cmake"
####
#### Running command: "cmake /home/kisonhe/Desktop/sdk_orcs_mcnm_ws/src -DCATKIN_DEVEL_PREFIX=/home/kisonhe/Desktop/sdk_orcs_mcnm_ws/devel -DCMAKE_INSTALL_PREFIX=/home/kisonhe/Desktop/sdk_orcs_mcnm_ws/install -G Unix Makefiles" in "/home/kisonhe/Desktop/sdk_orcs_mcnm_ws/build"
####
####
#### Running command: "make -j4 -l4" in "/home/kisonhe/Desktop/sdk_orcs_mcnm_ws/build"
####
SDK sdk_orcs_mcnm_ws compiled and tested successfully.
Before starting to use the SDK, please source the setup.bash file in the SDK directory :)
```

SDK Package Structure Description

The packages are similar, here is an example with ORCS-DIFF.

```
root@1c2edac84f0b:~# tree -d -L 5
.
├── sdk_orcs_diff_ws
│   ├── src
│   │   ├── demo
│   │   │   ├── demo_general_chassis
│   │   │   ├── demo_vehicle
│   │   │   └── tools
│   │   └── drivers
│   │       ├── xpkg_vehicle
│   │       │   ├── include
│   │       │   ├── ini
│   │       │   ├── launch
│   │       │   ├── scripts
│   │       │   ├── src
│   │       └── tools
```

- demo folder: Contains demo launch files, users can refer to them to write their own launch files.

“ **Warning** Note, the launch files in the demo folder are designed to only start one at a time. Do not launch multiple launch files simultaneously.

- drivers folder: Basic robot driver software, such as charging stations (if any), chassis control, etc.
- urdf folder: Used to store URDF files
- In addition, two other packages were installed via apt:
 - ros-\$ROS_DISTRO-xpkg-comm responsible for physical communication with the chassis.
 - ros-\$ROS_DISTRO-xpkg-msgs responsible for providing message types.

If you are not professionally guided, do not modify any packages other than the demo folder.

Using the SDK Package

The package provides a test demo, please refer to [Using ROS Demo](#)

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