

LHandProLib SDK Sample Project Guide

Windows Platform

Preparation Files

 LHandProLib-API-Windows-20250915.7z

Project Structure

```
├── x64                                     # On different platforms, x64
│   ├── bin                               # DLL files and compiled test programs
│   │   ├── LHandProLib.dll
│   │   ├── LHandProLibd.dll
│   │   └── npcap-1.82.exe
│   ├── include                           # Header files
│   │   ├── LHandProLib
│   │   │   ├── LHandProLib.hpp          # C++ encapsulation
│   │   │   └── LHandProLib.h            # C encapsulation
│   │   └── lib                          # Lib files
│   │       ├── LHandProLib.lib
│   │       └── LHandProLibd.lib
│   └── share
│       ├── LHandProLib
│       │   ├── examples                  # Sample program
│       │   │   ├── EtherCAT_cpp         # EtherCAT C++ Sample Project
│       │   │   └── EtherCAT_python      # EtherCAT Python Sample Project
│       └── x86                           # On different platforms, x86, The file structure
│           is similar to the above
```

Usage Instructions

Compile the Sample Project

1. `cd x64/share/LHandProLib/examples/EtherCAT_cpp`
2. `mkdir build && cd build`
3. `cmake .. -G "Visual Studio 17 2022" -A x64 -DCMAKE_BUILD_TYPE=Release -DCMAKE_INSTALL_PREFIX=../install`
4. `cmake --build . --config Release`
5. `cmake --install . --config Release`

After compilation, the executable LHandProLib_EtherCAT_Test.exe will be in the install/bin directory.

Install **npcap-1.82.exe** first to enable EtherCAT communication on Windows.

Use the sample project as a reference to build your custom application.

Linux Platform

Preparation Files

 LHandProLib-API-Linux-20250915.tar.gz

Project Structure

```
.
├── x86_64                                # x86_64 platform SDK file
│   ├── bin                              # Test program
│   │   ├── LHandProLib_EtherCAT_Test
│   │   └── setup.bash
│   ├── include                          # Header files
│   │   ├── LHandProLib
│   │   │   ├── LHandProLib.hpp          # C++ encapsulation
│   │   │   └── LHandProLib.h            # C encapsulation
│   ├── lib                              # so files
│   │   ├── libLHandProLibd.so
│   │   └── libLHandProLib.so
│   └── share
│       ├── LHandProLib
│       └── examples                      # Sample program
│           ├── EtherCAT_cpp              # EtherCAT C++ Sample Project
│           └── EtherCAT_python            # EtherCAT Python Sample Project
├── i386                                  # i386 platform SDK file
└── aarch64                              # aarch64 platform SDK file
```

Note: The provided master station library is validated and tested exclusively on the x86_64 platform.

Usage Instructions

Compile the Sample Project

```
# Update system packages and install dependencies
1. sudo apt update
2. sudo apt install cmake
3. sudo apt install build-essential
# Enter the folder containing the LHandProLib API Linux compressed file
1. tar -xzf LHandProLib-API-Linux-xxxxxxx.tar.gz      # Extract the SDK package
2. cd x86_64/share/LHandProLib/examples/EtherCAT_cpp/
3. mkdir build && cd build
```

```
4. cmake .. -DCMAKE_BUILD_TYPE=Release -DCMAKE_INSTALL_PREFIX=../install
5. make
6. make install                                # Install the compiled output to
the install directory
7. cd ../install/bin
8. sudo cp libLHandProLib.so /usr/local/lib/    # Copy the shared library to the
system library path (for global access)
9. sudo ldconfig                                # Refresh the dynamic linker
cache
10. sudo setcap cap_net_raw,cap_net_admin+ep ./LHandProLib_EtherCAT_Test # Grant
required privileges (raw socket + network admin)
11. ./LHandProLib_EtherCAT_Test                # Run the executable
```