

The setup for IPbus based Control System

1. Vivado Lab Edition for programming FPGA

Xilinx Vivado Lab Lin 2019.2

https://www.xilinx.com/member/forms/download/xef-vivado.html?filename=Xilinx_Vivado_Lab_Lin_2019.2_1106_2127.tar.gz

Note: Requiring a Xilinx account

2. On Centos

1. Install the prerequisites

```
sudo yum -y install make rpm-build git-core erlang gcc-c++ boost-devel  
pugixml-devel python-devel
```

2. Checkout from git and compile

```
git clone --depth=1 -b v2.7.5 https://github.com/ipbus/ipbus-software.git  
/opt  
cd ipbus-software  
make
```

3. Install the software

```
make rpm  
sudo yum localinstall `find . -iname "*.rpm"`
```

Otherwise, run the following distribution-agnostic install command:

```
sudo make install
```

3. On Ubuntu

1. Install the prerequisites

```
sudo apt-get install -y git erlang make g++ libboost-all-dev libpugixml-dev  
python-all-dev rsyslog  
sudo touch /usr/lib/erlang/man/man1/x86_64-linux-gnu-gcov-tool.1.gz  
sudo touch /usr/lib/erlang/man/man1/gcov-tool.1.gz
```

2. Checkout from git

```
git clone --depth=1 -b v2.7.5 https://github.com/ipbus/ipbus-software.git  
/opt/  
cd /opt/ipbus-software
```

3. For a reason that ipbus-software is not officially supported on Ubuntu/Debian, some modifications must be made before compiling the source.

- Download OPT 20.1, and copy it to **extern/erlang** and **controlhub**

```
wget http://erlang.org/download/otp_src_20.1.tar.gz
tar xzvf otp_src_20.1.tar.gz
cp otp_src_20.1.tar.gz extern/erlang && cp -r otp_src_20.1 extern/erlang
cp otp_src_20.1.tar.gz controlhub && cp -r otp_src_20.1 controlhub
```

- Modify two Makefiles

```
mv patch.txt /opt/ipbus-software
cd /opt/ipbus-software
git apply < patch.txt
```

4. Compile software

```
make Set=all BUILD_ERLANG=1 -j8
```

5. Set environment

```
echo "source /opt/ipbus/ipbus-software/uhal/tests/setup.sh" >> ~/.bashrc
source ~/.bashrc
```

6. Done!

3. Note

Before run IPbus scripts, a **controlhub** service should be started.

```
controlhub_start
```

4. Reference

- <https://ipbus.web.cern.ch/ipbus/doc/user/html/software/install/compile.html>
- <https://github.com/ipbus/ipbus-software/issues/65>