



Bridge of Life
Education

Catapult Setup Guide(NTHU)

Jiin Lai

Catapult

High-level synthesis (HLS) creates RTL implementations from abstract specifications described with C / C++.

Tool setup

- You need to setup Catapult and Questasim in IC lab account.
 - Run “run_catapult” to check the tool is correctly installed.
- You also need to setup the directory of some environment variables to run up our sample code.
 - Run “lab1_fir” to check the environment variables is setup correctly.
 - You may need to create “bin” folder to save execution file.
- TA will give you another tool setup guide for tool setup.

Setup Catapult HLS and QuestaSim

- Add the following source file in .tcshrc

Catapult HLS	2023.1	source /usr/cadtool/user_setup/05-catapult.csh		catapult
Questa_Sim	2021.1	source /usr/cadtool/user_setup/05-questasim.csh		

```
source /usr/cadtool/user_setup/05-catapult.csh  
source /usr/cadtool/user_setup/05-questasim.csh
```

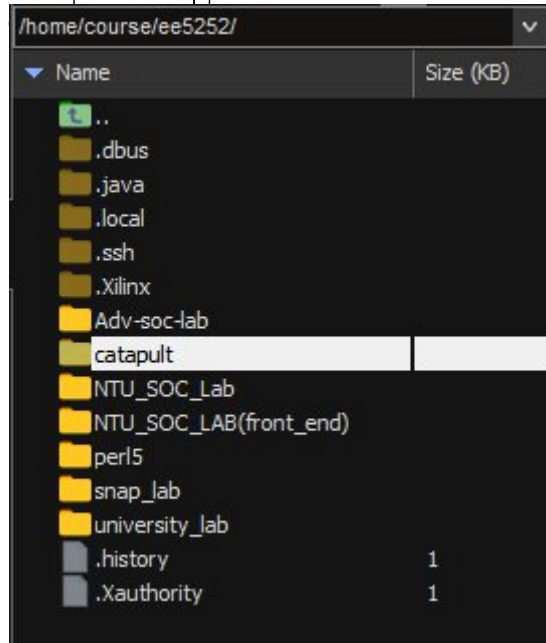
Add the environment variable

- Add the following command file in .tcshrc

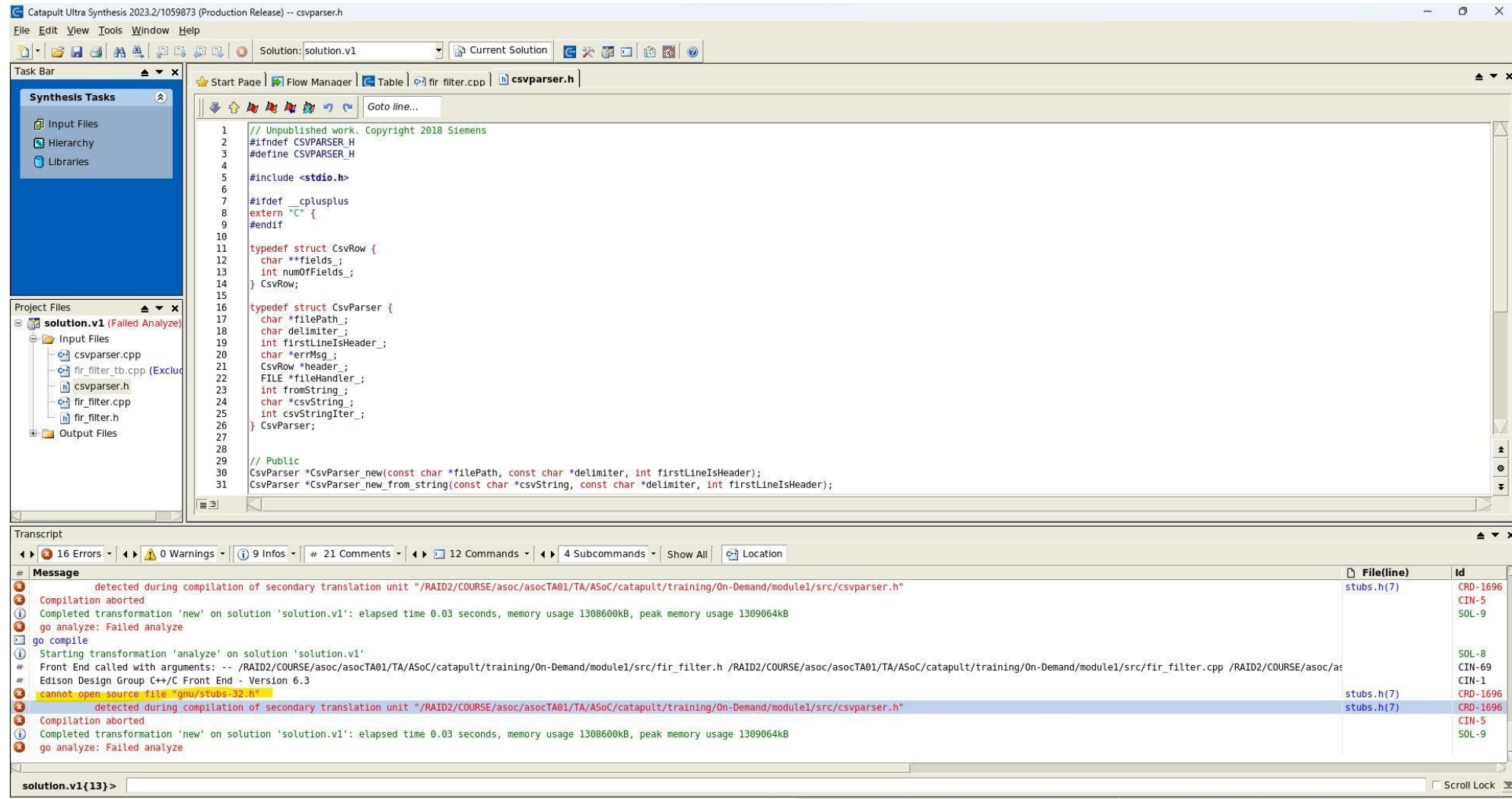
```
echo "Catapult setup"
setenv MGC_HOME /usr/cadtool/mentor/Catapult/2023.1/Mgc_home
setenv CXX_HOME $MGC_HOME
setenv SYSTEMC_INCDIR $MGC_HOME/shared/include
setenv SYSTEMC_LIBDIR $MGC_HOME/shared/lib
setenv LD_LIBRARY_PATH $SYSTEMC_LIBDIR
setenv LD_LIBRARY_PATH ${MGC_HOME}/lib:$LD_LIBRARY_PATH
echo "QuestaSim setup"
setenv MODEL_TECH /usr/cadtool/mentor/Questa_Sim/2021.1_1/questasim/bin
setenv QUESTA_HOME /usr/cadtool/mentor/Questa_Sim/2021.1_1/questasim
```

Lab file access

- For NTHU student, you can access the file in the following directory
 - /home/course/ee5252/



Error: cannot open source file "gnu/stubs-32.h"

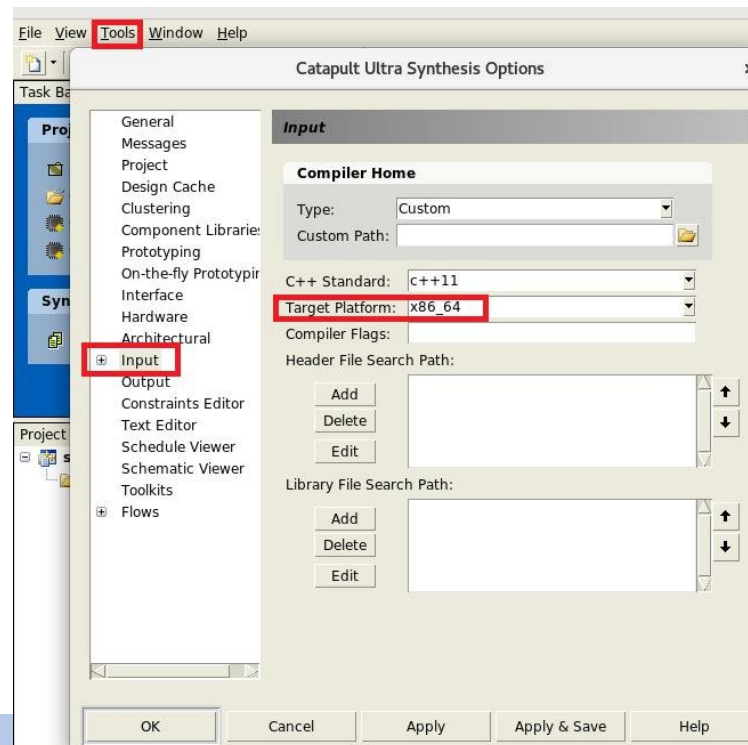


Probable solution:

- Install `glibc-devel.i686` tool
- You can check the server has installed the tool or not.
- However, it needs root permission to install this tool.

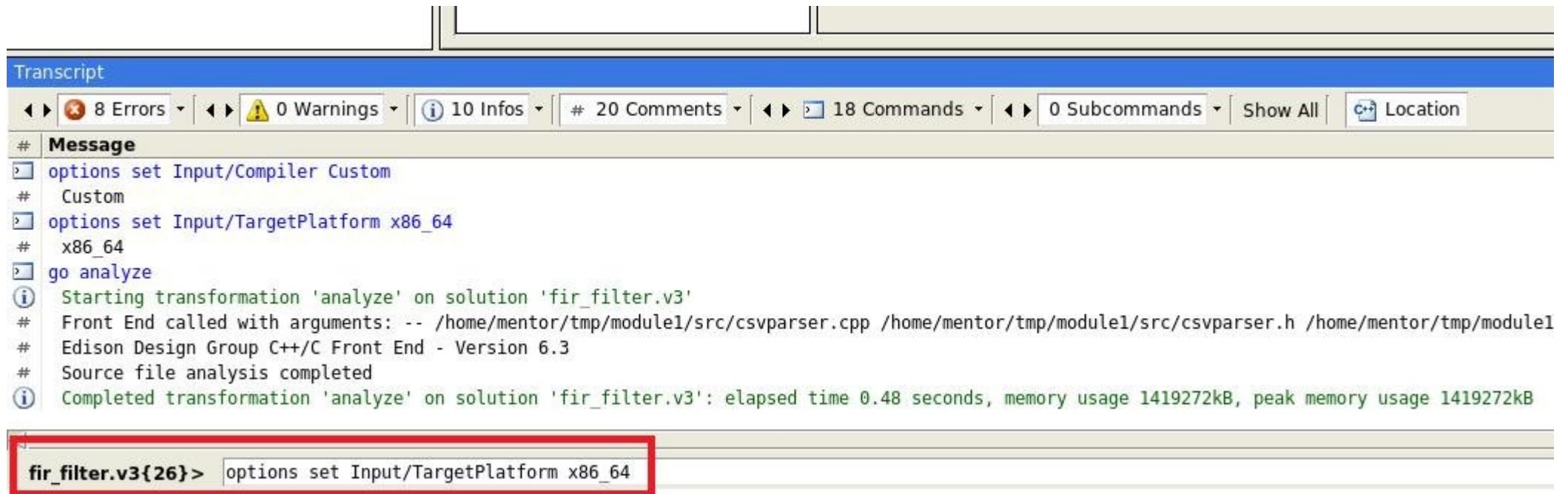
Probable solution:

- Set tools in Catapult GUI
- Set target platform of input (x86_64)
- In NYCU ICLab server, it doesn't work.



Probable solution:

- Type the command in Catapult GUI
- Options set Input/TargetPlatform x86_64
- It works in NYCU ICLab server



The screenshot shows the 'Transcript' window in the Catapult GUI. The window has a toolbar with icons for 8 Errors, 0 Warnings, 10 Infos, 20 Comments, 18 Commands, and 0 Subcommands. Below the toolbar, the transcript shows the following messages:

```
# Message
> options set Input/Compiler Custom
# Custom
> options set Input/TargetPlatform x86_64
# x86_64
> go analyze
(i) Starting transformation 'analyze' on solution 'fir_filter.v3'
# Front End called with arguments: -- /home/mentor/tmp/module1/src/csvparser.cpp /home/mentor/tmp/module1/src/csvparser.h /home/mentor/tmp/module1
# Edison Design Group C++/C Front End - Version 6.3
# Source file analysis completed
(i) Completed transformation 'analyze' on solution 'fir_filter.v3': elapsed time 0.48 seconds, memory usage 1419272kB, peak memory usage 1419272kB
```

At the bottom of the window, a command prompt shows the command being entered:

```
fir_filter.v3{26}> options set Input/TargetPlatform x86_64
```