Starting DAS

DAS Group

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1 Starting the DAS

To launch the DAS project, you need to follow these steps:

1. Generate the bitstream.
2. Export the hardware (file.xsa). Go into file, export, export hardware and choose include bitstream.
3. Launch Vitis.
4. Create a platform from the file.xsa.
5. Open the platform settings → board support package → lwip213, and press "Regenerate BSP" (this is necessary for the internet package).
6. Click on "Build."
7. Find the example project: "IWIP Echo Server," then press "Create Application Component From Template." Choose the correct platform from the previous step.
8. Go into application, sources, and replace the following files (code is provided on githup):
   - echo.c
   - main.c

   And remove the following files
   - platform.h
   - platform.c
   - platform-mb.c
   - platform-zynq.c
   - platform-zynqmp.c
9. Press "Build" on the application.

10. Press ”Run”

    This following Stages only necessary if ILA (debugger) is utilized:

11. Lunch Vivado
12. Open hardware manager
13. open Target connection.
14. open Debugger

1.1 Connecting to Ethernet

In order to connect to the internet you need to connect manually to the internet by following step:

1. open ”control panel” –> Network and Internet –> Network and Sharing Center
2. from list on the left press Change Adapter Settings.
3. press on ethernet
4. Under Networking, go to internet protocol version 4 (TCP/IPv4)
5. make sure the box is enabled and once marked press on properties
6. Under General, press on: ”Use the following IP Address:”

   you can fill in the following :

   - IP address: 192.168.1.5
   - Subnet Mask: 255.255.255.0
   - Default gateway: 192.168.1.1

7. the press ok and they you are ready to connect :)

1.2 PuTTY

You can launch PuTTY to monitor the connection to the ethernet once you receive the following you are connected and ready to send and receive packets:

```
————lwIP TCP echo server ————
TCP packets sent to port 6001 will be echoed back
Setting up timer!
Setting up DMA!
Start PHY autonegotiation
Waiting for PHY to complete autonegotiation.
```

```
autonegotiation complete
Using default Speed from design
link speed for phy address 0: 1000
Board IP: 192.168.1.10
Netmask : 255.255.255.0
Gateway : 192.168.1.1

--- Initialzing  THIS IS DAS!!! ---
TCP echo server started @ port 7
```

1.3 MATLAB

Lunch Matlab and go into echo-client-matlab-test, specify the amount of bytes you want to transfer and run the program.