ATLAS: CHESS2: How to build firmware

BEFORE you start to build the firmware:

- Check out the git repository from github
- Setup your Xilinx Vivado:
  - If you are on the SLAC AFS network:

    ```
    $ source /afs/slac/g/reseng/xilinx/vivado_2016.4/Vivado/2016.4/settings64.csh     (or settings64.
    sh if UNIX shell is BASH)
    ```

  - Else you will need to install Vivado 2016.4 and install the Xilinx Licensing

    > ⓘ   The carrier board uses the Kintex®-7 XC7K70T FPGA, which is supported by the Xilinx's free Webpack licensing

  - Create a output build directory for the firmware output build files

  - Because we typically at SLAC have the git clone in AFS space, we create a symbolic link to a local hard drive to improve build performance and reduce latency in file access

    ```
    $ ln -s /u1/build atlas-chess2/firmware/build
    ```

  - If your git clone is already on a local drive, then I would recommend creating a build directory in your git clone:

    ```
    $ mkdir atlas-chess2/firmware/build
    ```

How to build the PGP version of the firmware:

```
# Go to the PGP firmware's target directory:
$ cd atlas-chess2/firmware/targets/AtlasChess2FebPgp

# Build the firmware
$ make
```

How to build the Ethernet version of the firmware:

```
# Go to the PGP firmware's target directory:
$ cd atlas-chess2/firmware/targets/AtlasChess2FebEth

# Build the firmware
$ make
```

> ⓘ **DHCP**
>
> In AtlasChess2FebEth.vhd, the Ethernet firmware support either a hard coded static IP address or DHCP. The default values are DHCP is enabled (ETH_DHCP_G = true) and startup/static IP address is 192.168.1.10 (ETH_IP_ADDR_G = 0x0A01A8C0)
>
> If DHCP is not allowed on your network or require using static IP address, set ETH_DHCP_G = false and ETH_IP_ADDR_G to your desired static IP address

Contact

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