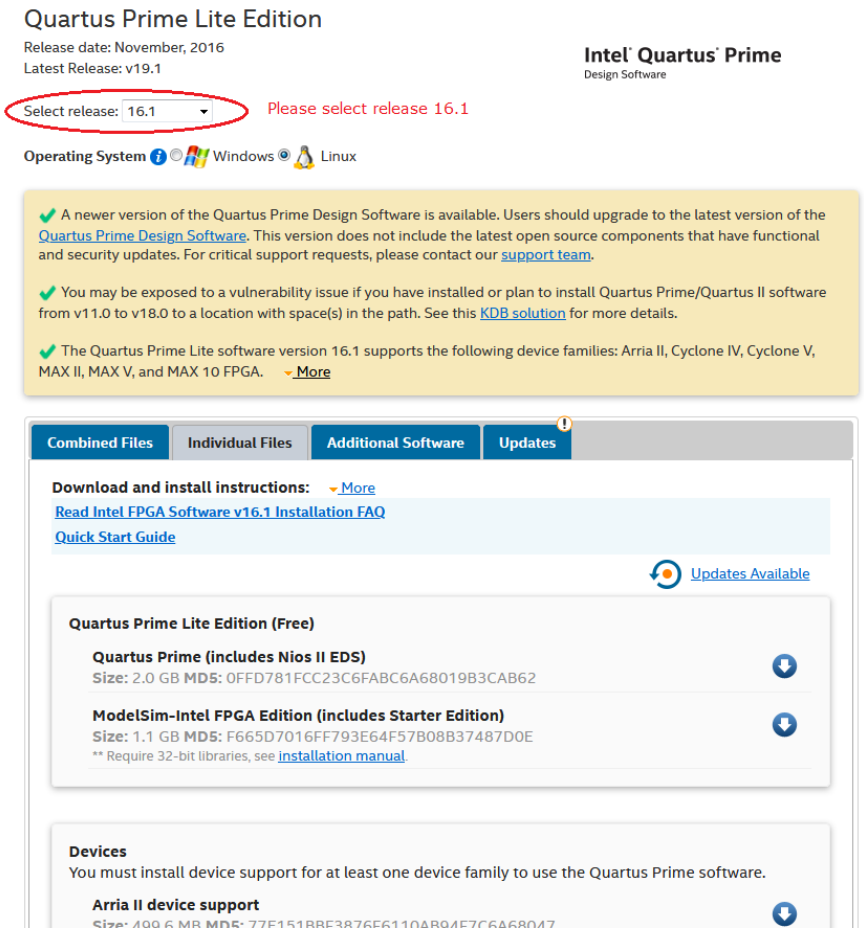
4. FIRMWARE UPDATE PROCEDURE

FW Update Tool

The firmware (FW) of UCD-400 is programmed with a separate tool called **Quartus Prime (includes Nios II EDS)**. The tool can be downloaded from **Intel® FPGA** website:
https://fpgasoftware.intel.com/?edition=lite

On the download page, please **Select release 16.1.** Please download **Quartus Prime (includes Nios II EDS)**.



Note:	Registering is needed for the download.

Please download and install the tool in the PC.

Connect to the UCD-400 Unit

- Power on the UCD-400.
- Connect UCD-400 with a USB cable to the PC through **Programmer** connector. (Pls refer to page 7)

The programming interface is the Ethernet connector in the UCD-400 unit. The PC can be connected to the UCD-400 unit either through a network HUB or directly.

Please follow either of the two procedures below.

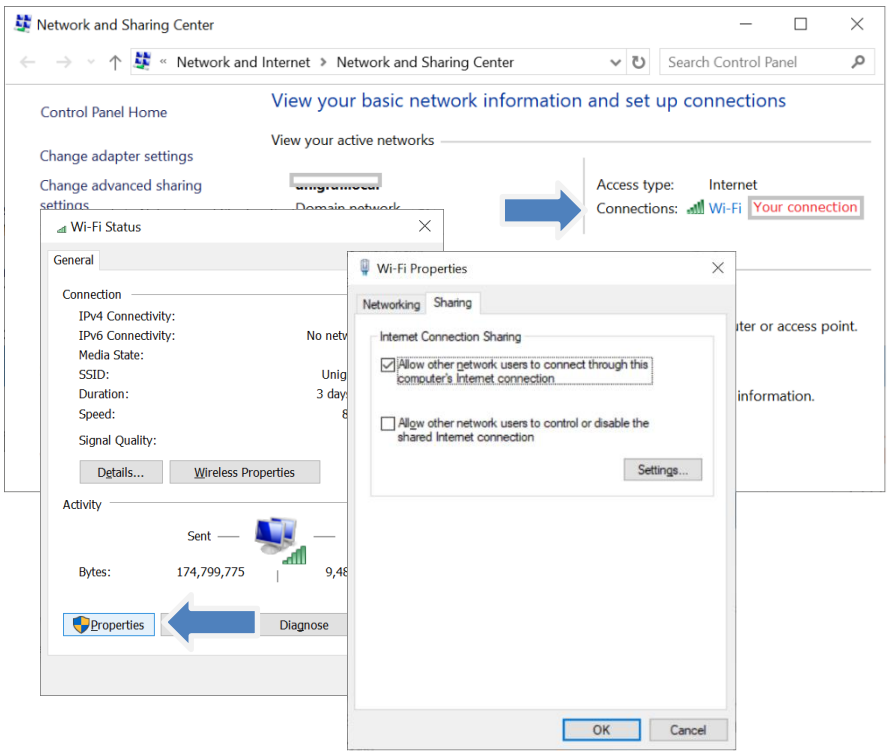
Connecting Through Ethernet Network (Alternative 1)

- Connect UCD-400 though **Ethernet** connector to the same network HUB where the programming PC is connected.

Connecting with Direct Ethernet Cable (Alternative 2)

In case of direct connection, the PC needs to be configured to be an Ethernet network host by enabling WIFI network share (The WIFI network will not be used for programming).

- Connect UCD-400 directly to the PC though **Ethernet** connector;
- Enable **WIFI** Internet access of the PC.
- From Network and Sharing Center click on the WiFi connection
- In Wi-Fi Status dialog click **Properties** and select **Sharing** tab
- Select *Allow other network users to connect through this computer's Internet connection*
- Click **OK** and **Close**.



Note	The network sharing is shown above for Windows 10. Similar controls can be found for other Windows versions and other operating systems.

Programming the FW

▶ Run **Nios II 16.1 Command Shell** application as Administrator

Note	*Nios II 16.1 Command Shell* application needs to be run as Administrator (Right click with mouse and select **Run as Administrator)**
Hint	Right click on the top edge of *Command Shell* and select **Edit** > **Paste** to paste the commands below

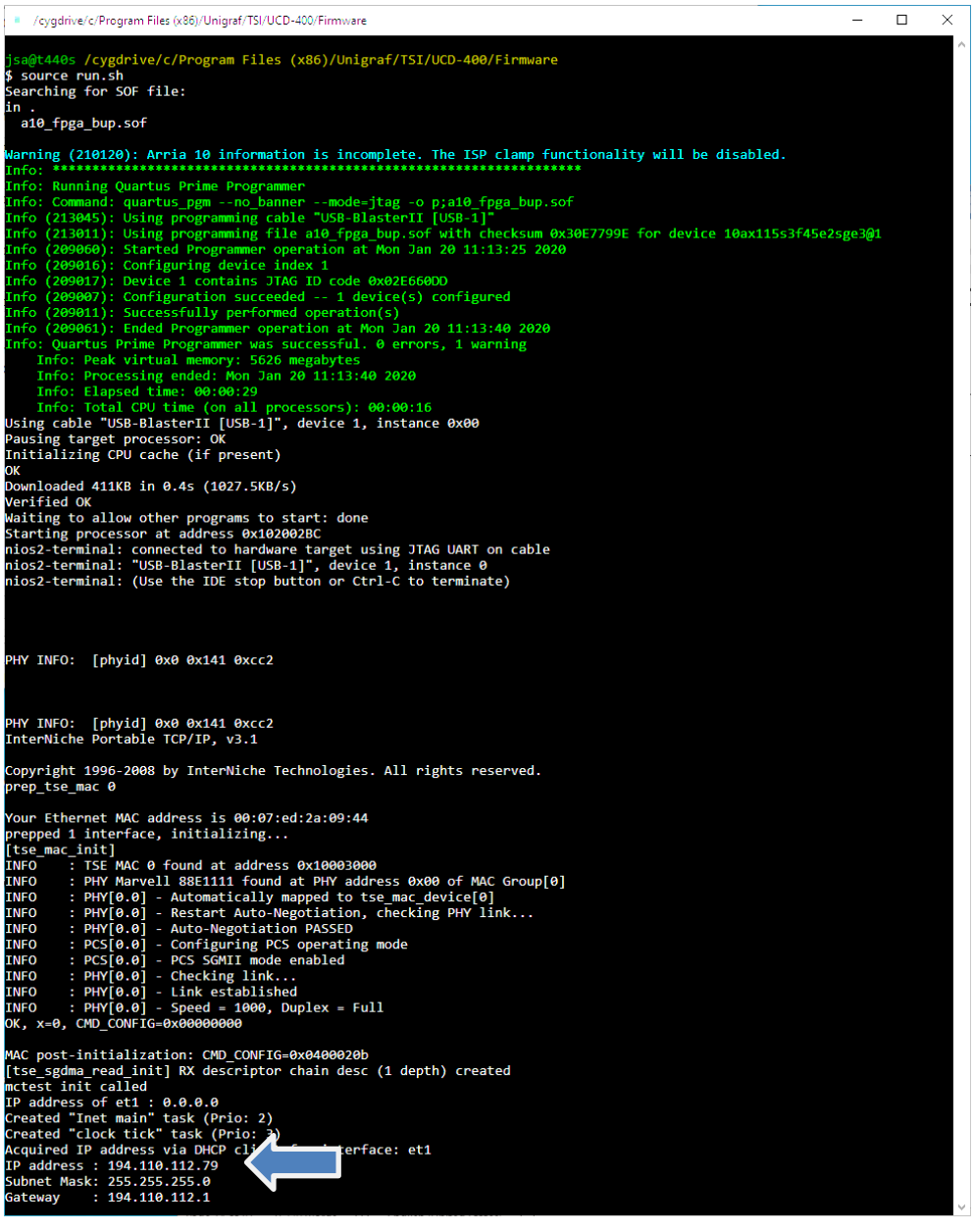
▶ Select FW update folder location. For example:

```
cd /cygdrive/c/Program\ Files\ \(x86\)/Unigraf/TSI/UCD-400/Firmware/
```

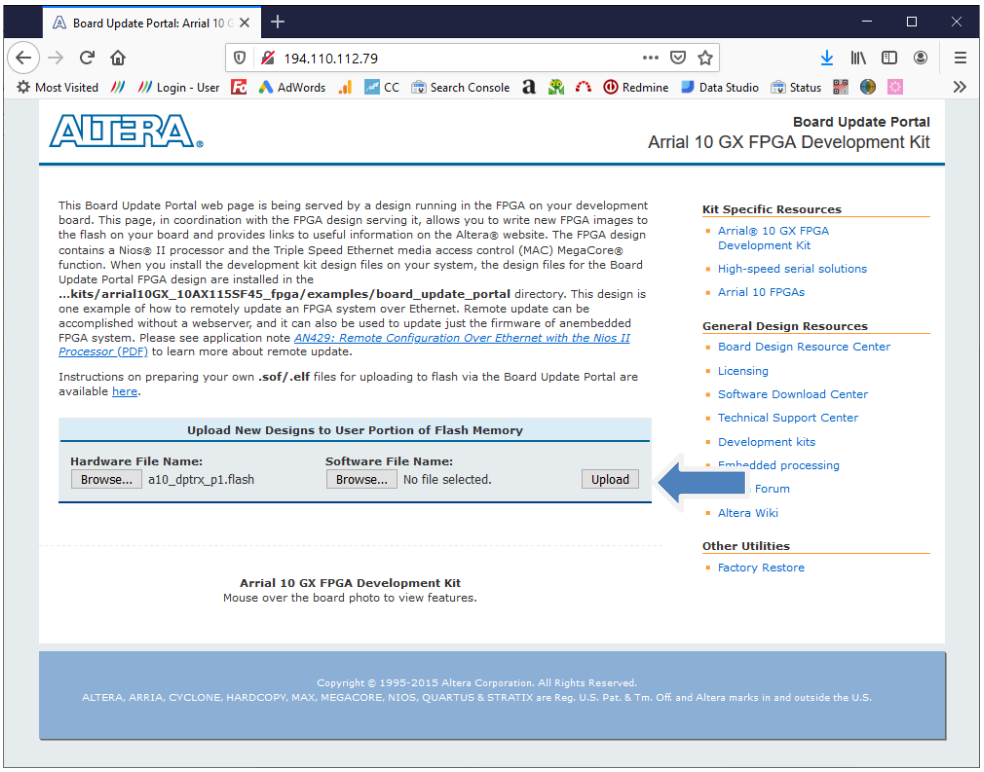
▶ Run the boot loader that initiates the HTML programming interface.

```
source run.sh
```

Upon command completion, the **assigned IP address for UCD-400 device** is highlighted in the picture below.



- Launch web browser on the PC. If Ethernet connection is used, please make sure that the PC is connected to the same network as the UCD-400 unit.
- Access the HTML programming interface by entering the IP address assigned for the UCD-400 unit.



- Browse **Hardware File Name** for UCD-400 update (e.g. **a10_dptrx_p1.flash**) and then press “Upload” button
- Once uploading process done – cycle power on the UCD-400.

Note	Please cycle the power on the UCD-400 unit to enable the FW update.