Device Manufacturer Initial Firmware Flashing

When the manufacturer flashes the firmware in the IOT device ROM chip, we added a step to add a unique firmware signature to any firmware copy. So even the attacker gets the firmware sample, the firmware flashing program or an unused IOT device (such as an old sensor which was not used anymore), he cannot use them to make a fake IOT device and connect to our sensor.

The firmware flashing program contains 2 parts of program (client and server):

1. Firmware flashing client: This client is used to login server, generate the IOT device signature, flash firmware and signature to IOT device ROM chip.
2. Firmware verification server: Record the IOT flash information to the database. Verify the IOT device registration.

The sensor and client communication is using SSL.

Step 1: client login.