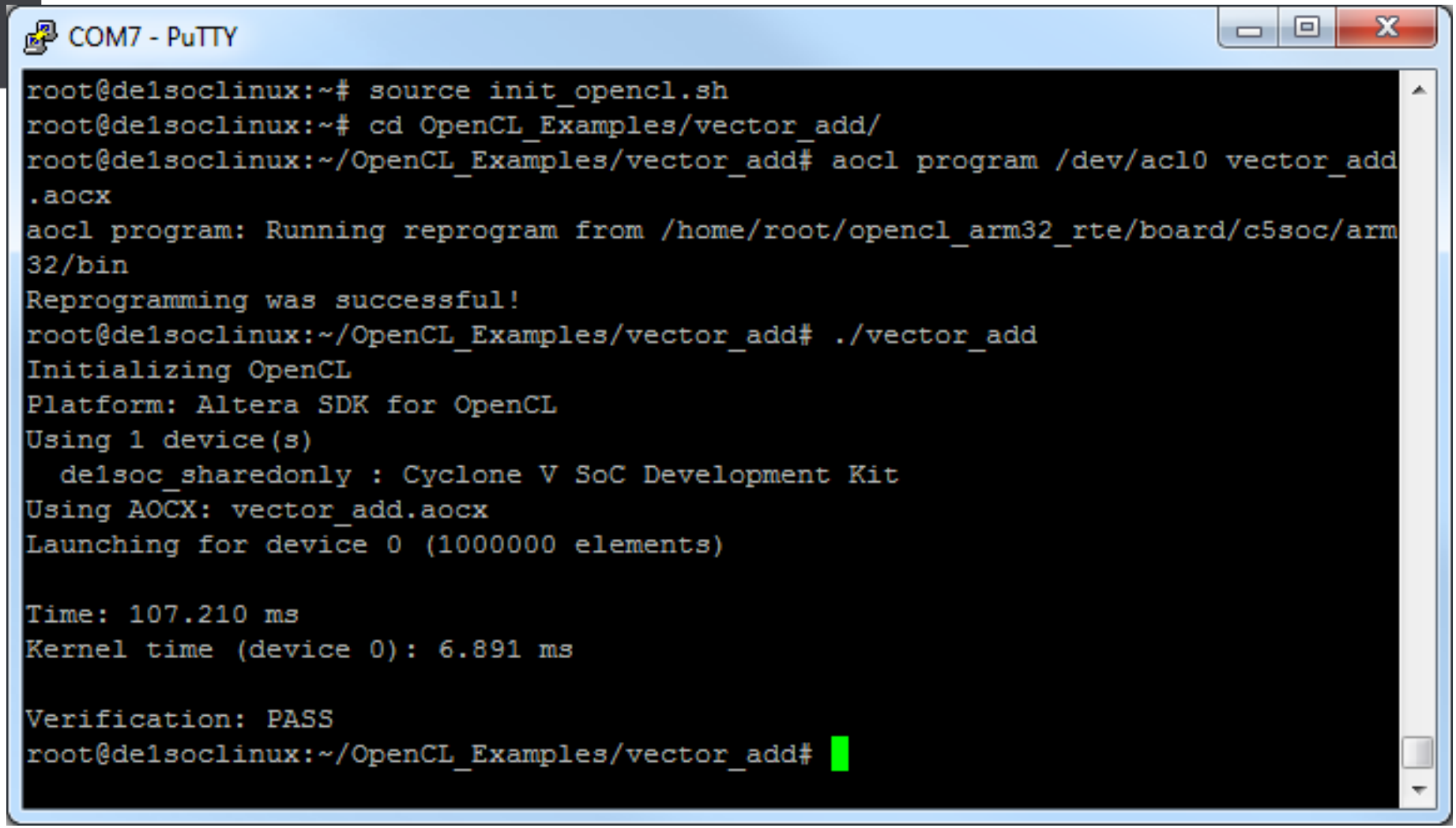
Running OpenCL on the DE1-SoC

- OpenCL application runs on top of Linux
- Linux drivers facilitate host program to FPGA (kernel) communication (via the FPGA-HPS bridges)
- Overall flow:
  - Load OpenCL drivers using a provided script
    - source init_opencl.sh
  - Program the FPGA with the kernel using the aocl utility
    - aocl program /dev/acl0 vector_add.aocx
  - Execute the host program
    - ./vector_add

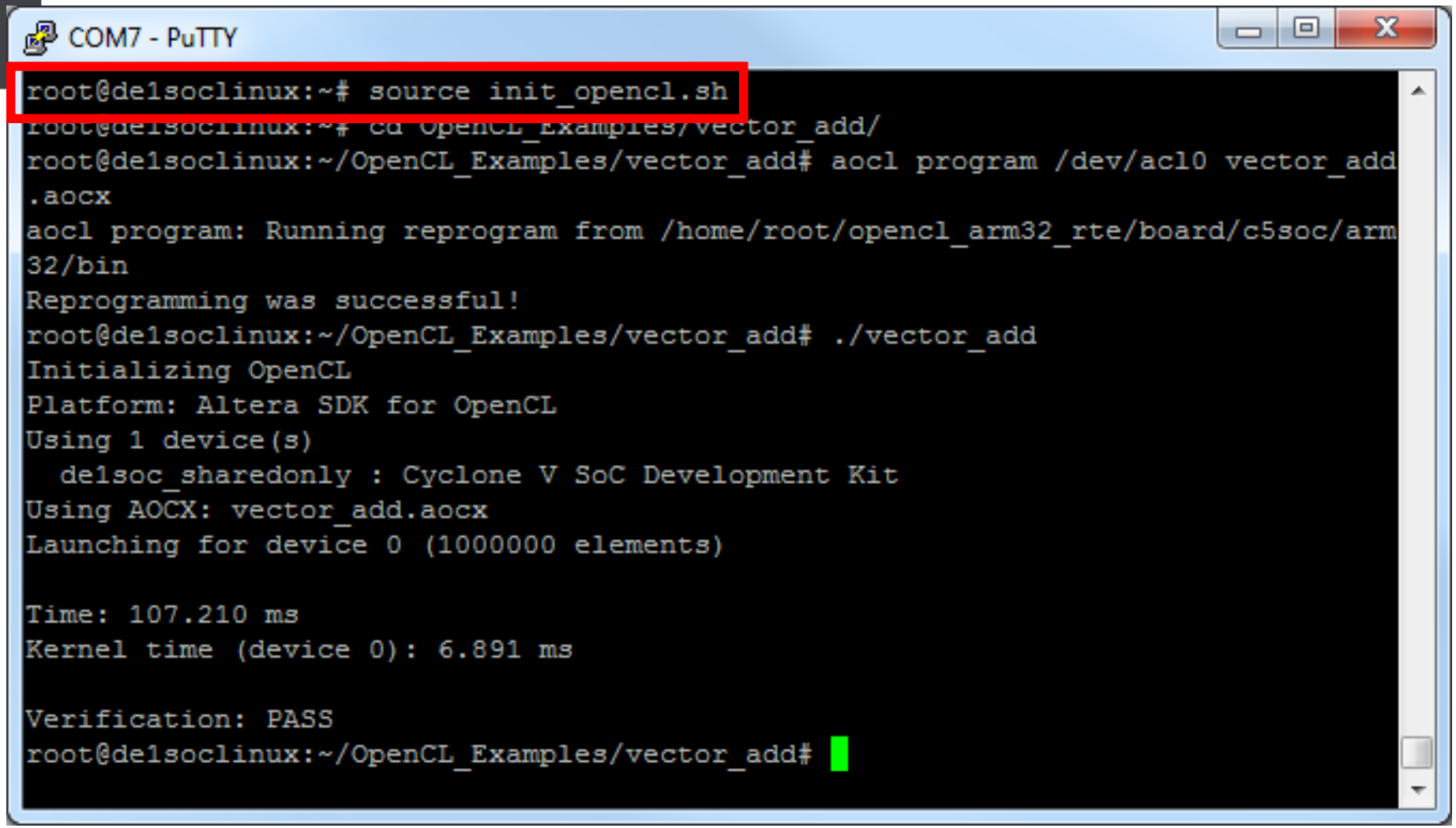
Exercise 8: Running an OpenCL Kernel

- Using AOCL to program and run the Vector Add example

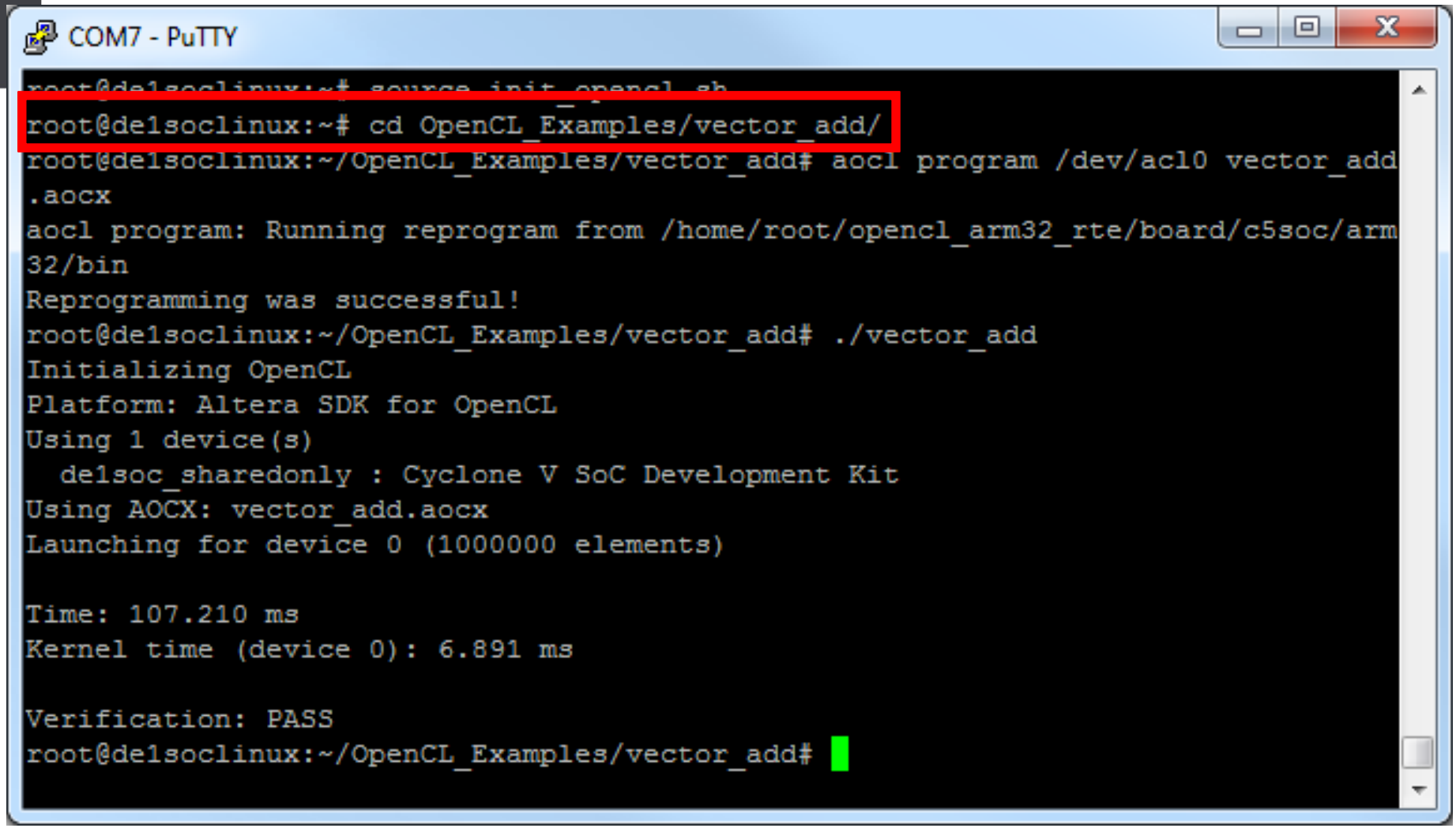
Step 1: Connect to the DE1-SoC using Putty



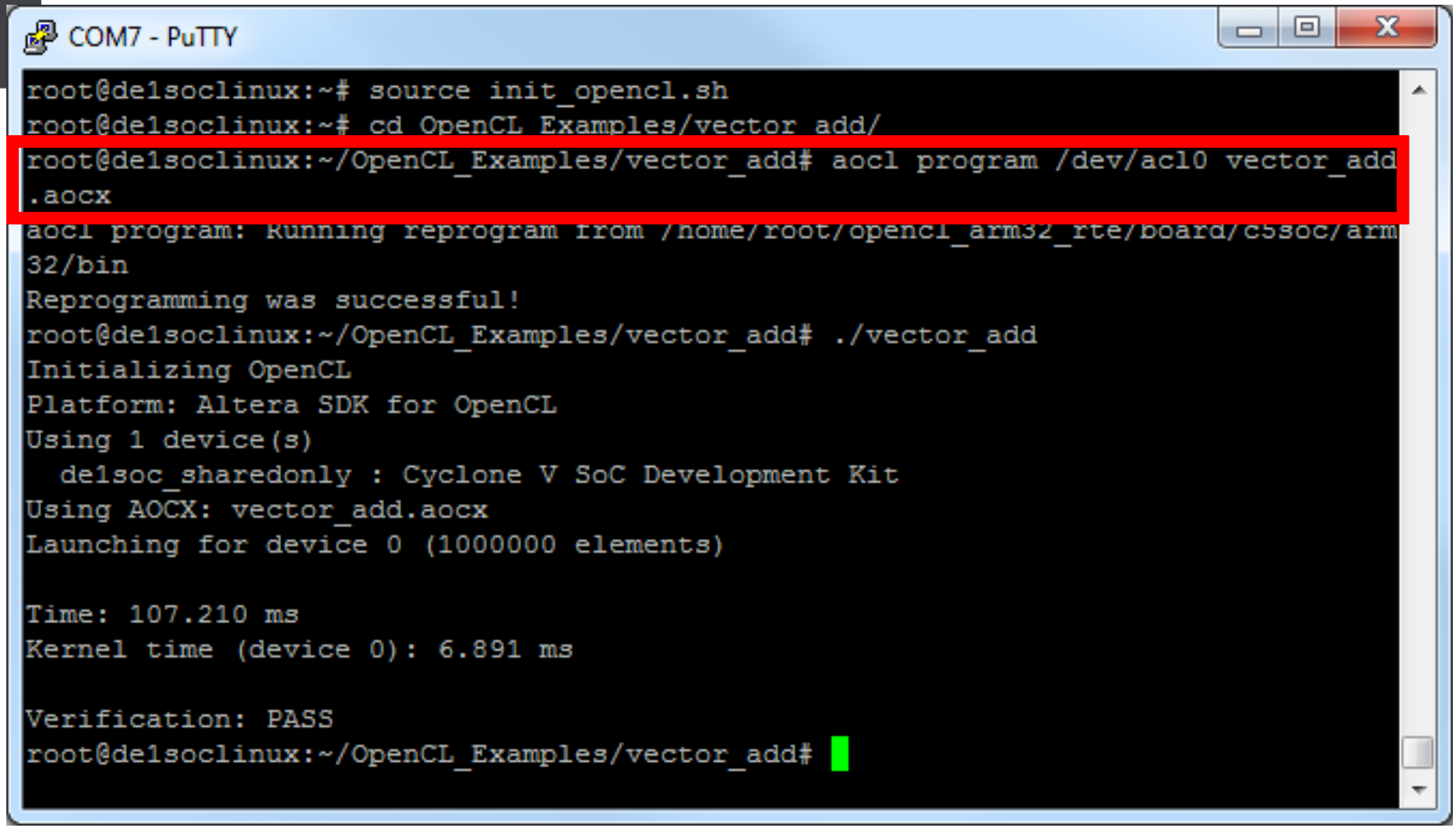
Step 2: Load the OpenCL Drivers



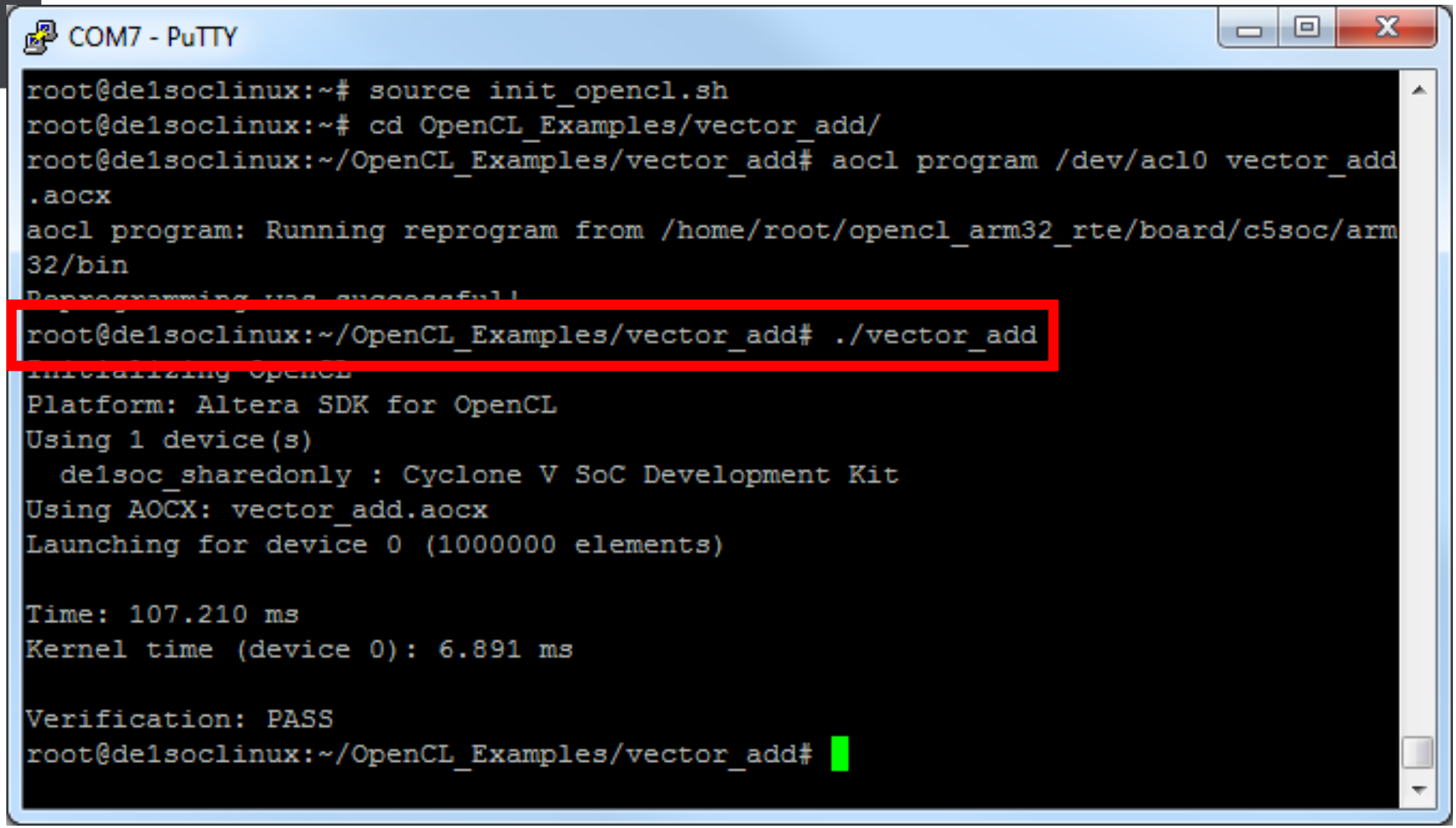
Step 3: Switch to the Vector Add Directory



Step 4: Program the FPGA with the Vector Add Kernel



Step 5: Execute the Host Program



Step 6: See the Program Output