**Tutorial 5**

**Converting .bit to .ace file**

*March 2022*

The firmware is loaded in the form of .ace files consisting of firmware for both north and south slaves. There are scripts called bit2svf and svf2ace in the Firmware repo to do this that can be copied to the home directory or from here /home/okepka/fw/RodSlave/scripts/. The scripts use Xilinx tool iMPACT for the conversion; hence a valid Xilinx setup is needed. Run these scripts from a machine that has Xilinx tools set up- for example, **pix-sr1-01**.

1. **Source Xilinx settings**

source /opt/Xilinx/14.7/ISE\_DS/settings64.sh

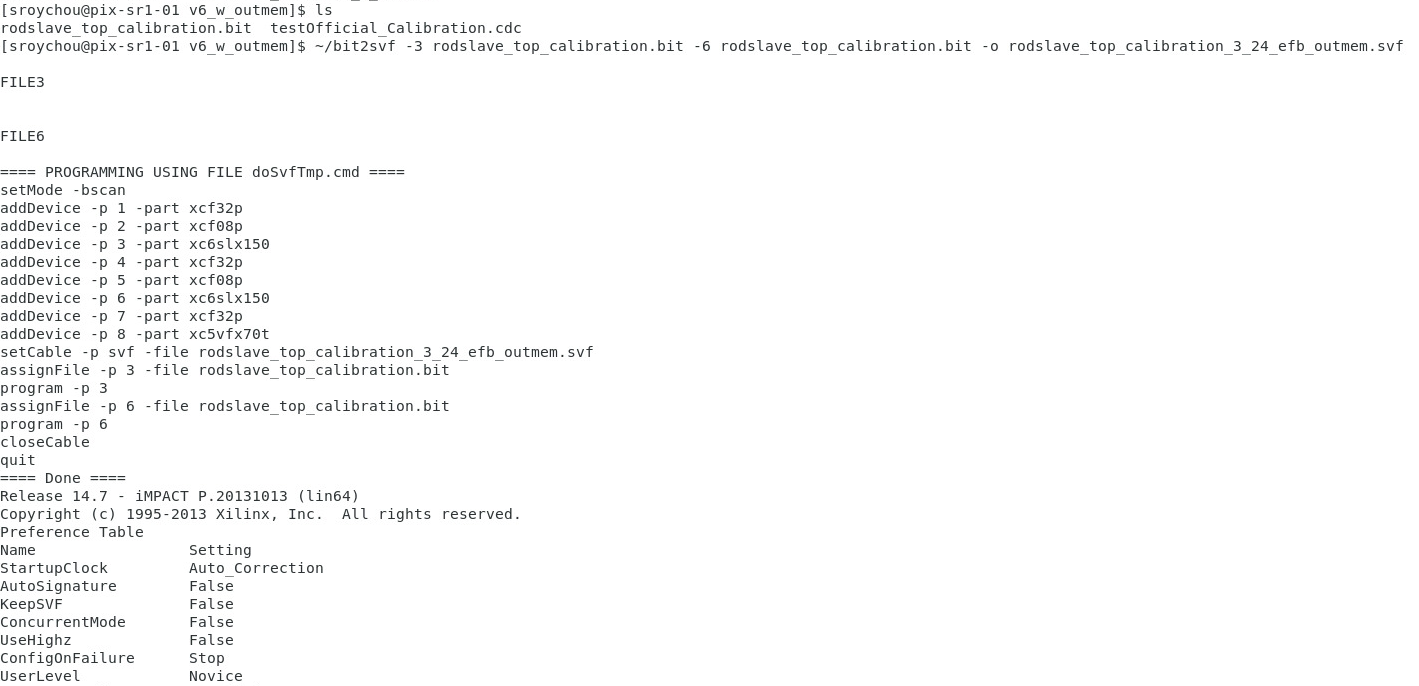
1. **bit2svf**

Create the SVF file using the two separate bit files (both are same here) and output filename as arguments

$SCRIPTDIR/bit2svf -3 ${NORTH\_BIT} -6 ${SOUTH\_BIT} -o $SVF

~/bit2svf -3 rodslave\_top\_calibration.bit -6 rodslave\_top\_calibration.bit -o rodslave\_top\_calibration\_3\_24\_efb\_outmem.svf

This gives rodslave\_top\_calibration\_3\_24.svf as output



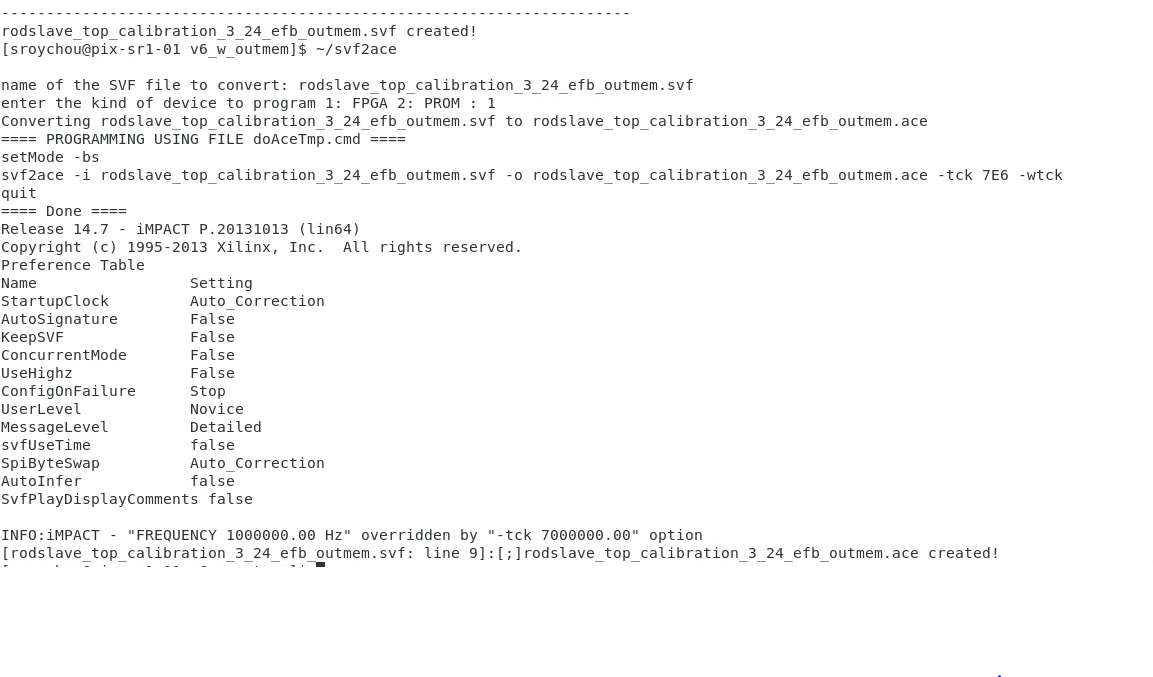
1. **svf2ace**

Generates the ace file with the same name as the input .svf except for the extension .ace instead of .svf

$SCRIPTDIR/svf2ace

~/svf2ace

The inputs are given here interactively



Load this ace file in the FPGA according to tutorial 2

