

1 Background

Create a synthesizable combinational module that accepts a 4-bit input x and generates a single-bit output y based on x and function select signal s . The selector should select which reduction operator to be applied to x in order to produce y according to the following:

- 0: and
- 1: or
- 2: xor
- 3: nand
- 4: nor

2 Implementation

The output ' y ' was generated in a case block with reduction operators applied to the input ' x '. The module implementation along with its testbench can be found in the 'scripts' directory. A sample of the waveform generated is provided:

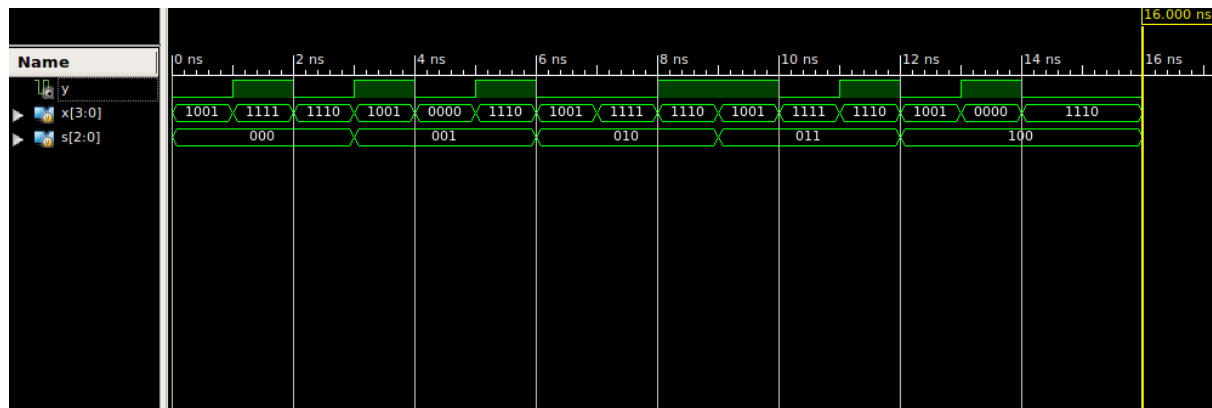


Figure 1: Waveform Generated from Part 3 Test Bench