EE599 Assignment 2

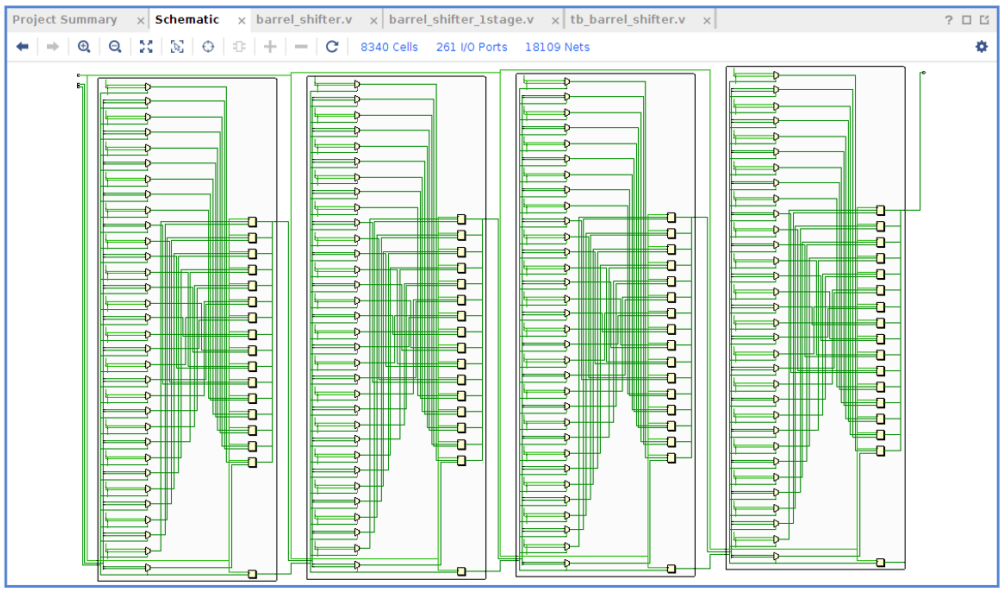
Yihao Wang 7410-1780-57

Github Repo Link: https://github.com/KevinWang96/EE599_YihaoWang_7410178057.git

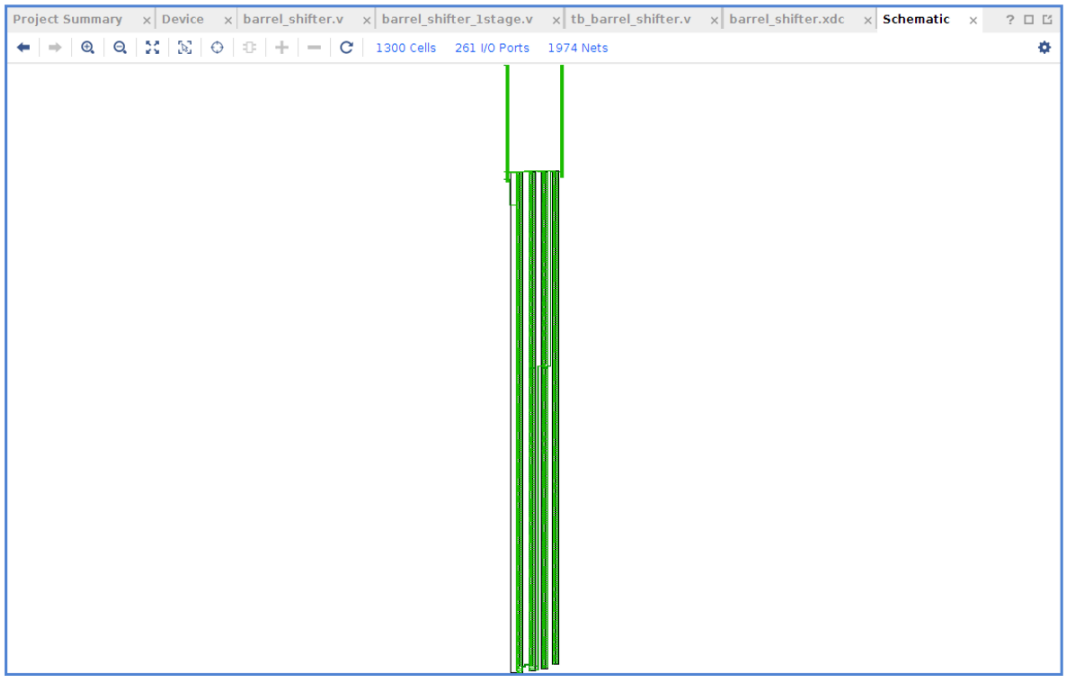
1. Barrel Shifter

1.1 16 elements design

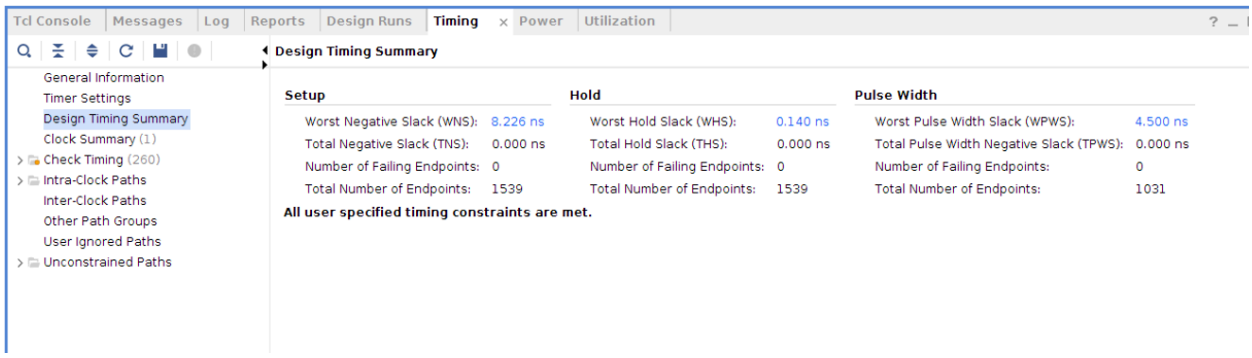
a. Schematic of elaborated design



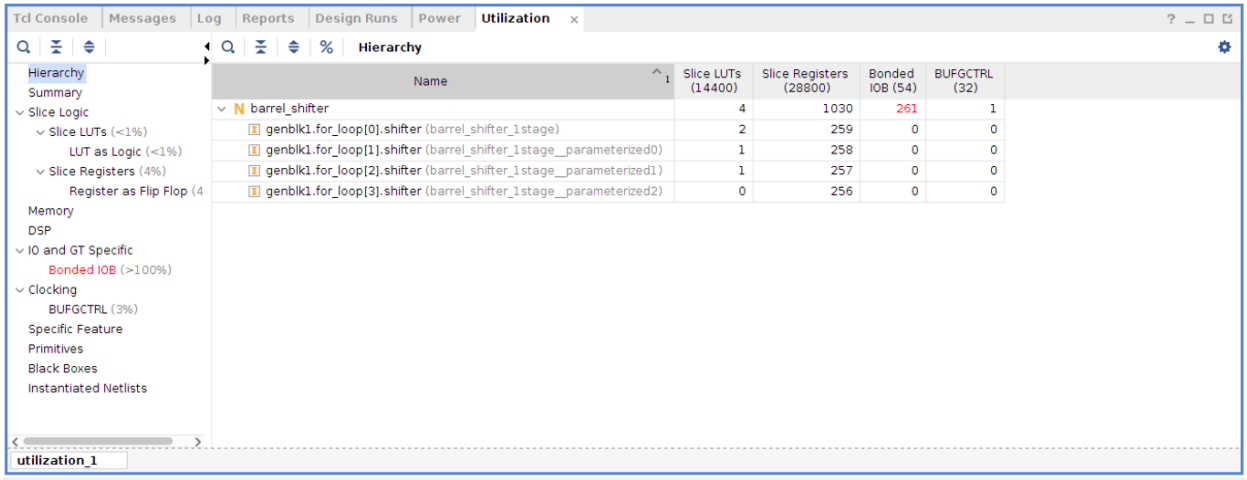
b. Schematic of synthesized design



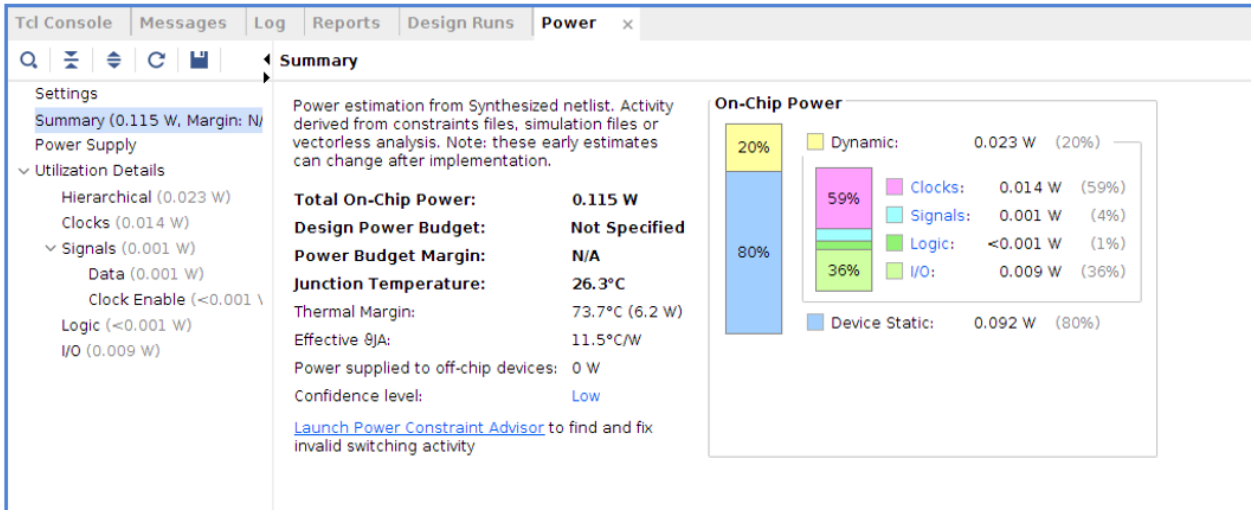
c. Timing report (clock cycle is 10 ns)



d. Utilization report

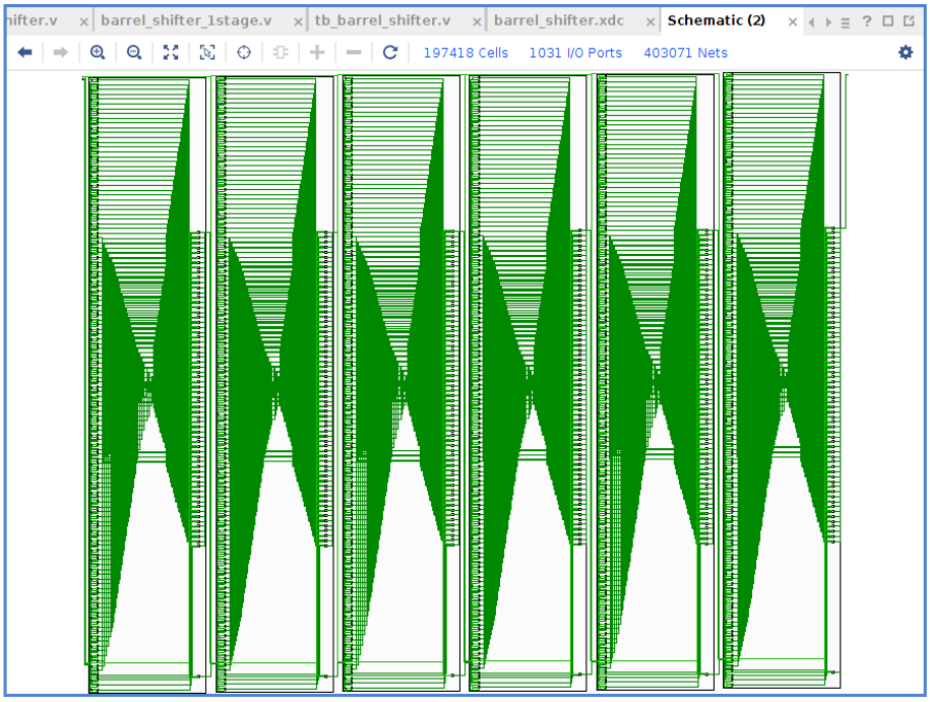


e. Power report

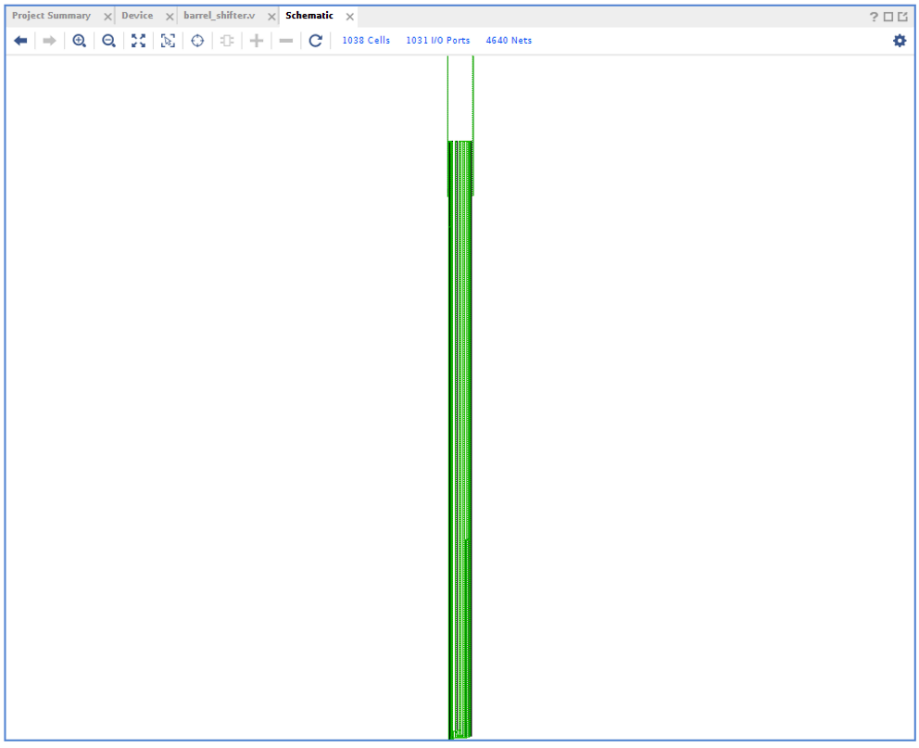


1.2 64 elements design

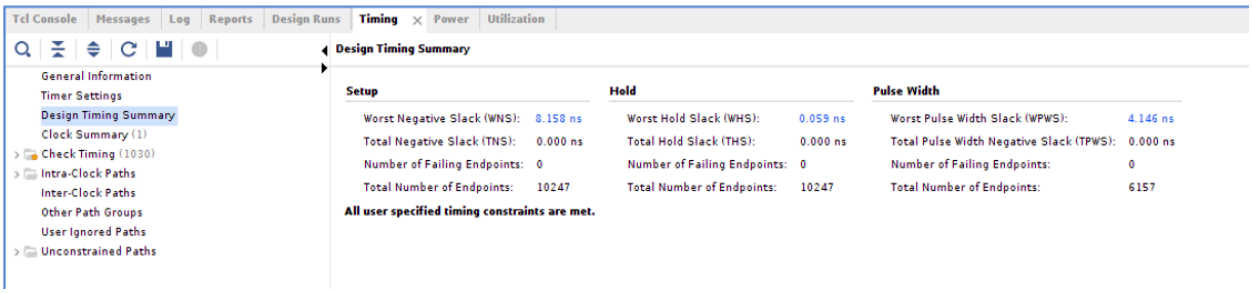
a. Schematic of elaborated design



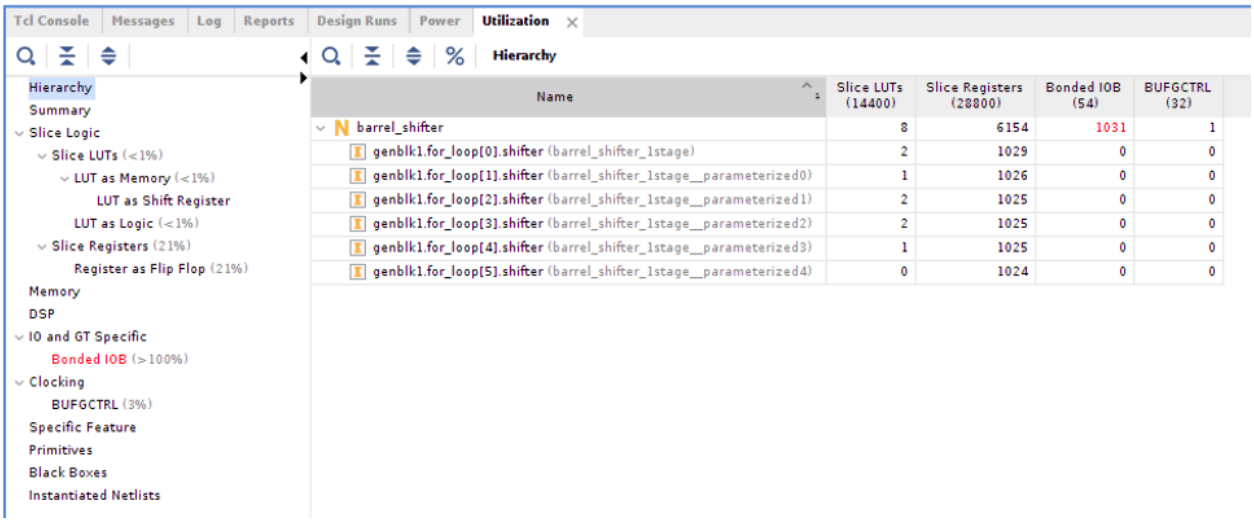
b. Schematic of synthesized design



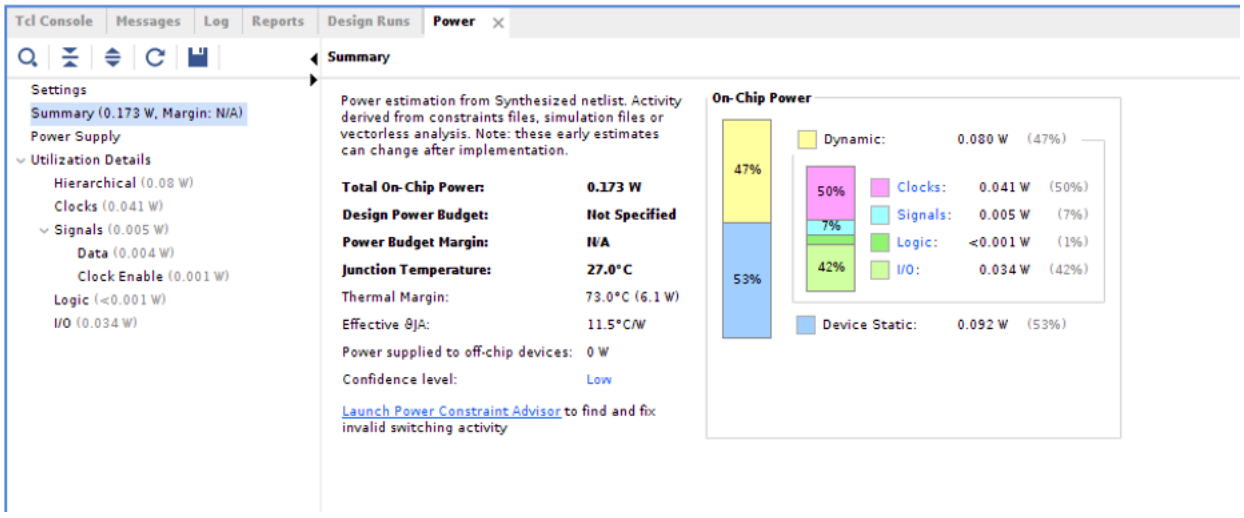
c. Timing report (clock cycle is 10 ns)



d. Utilization report



e. Power report

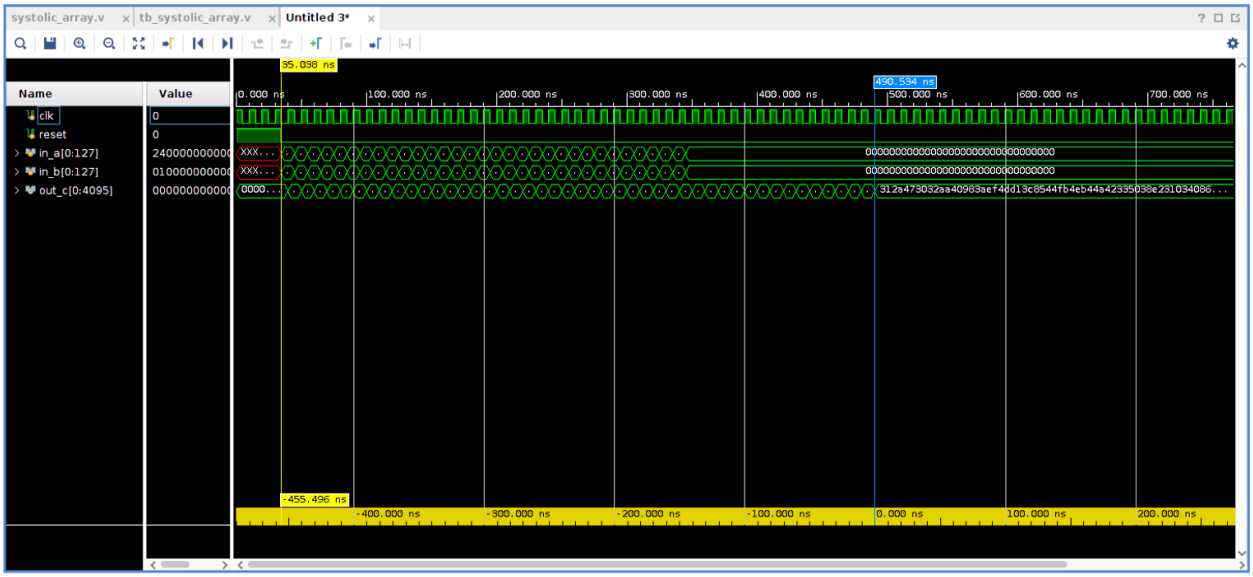


2. Systolic Array for Dense Matrix-Matrix Multiplication

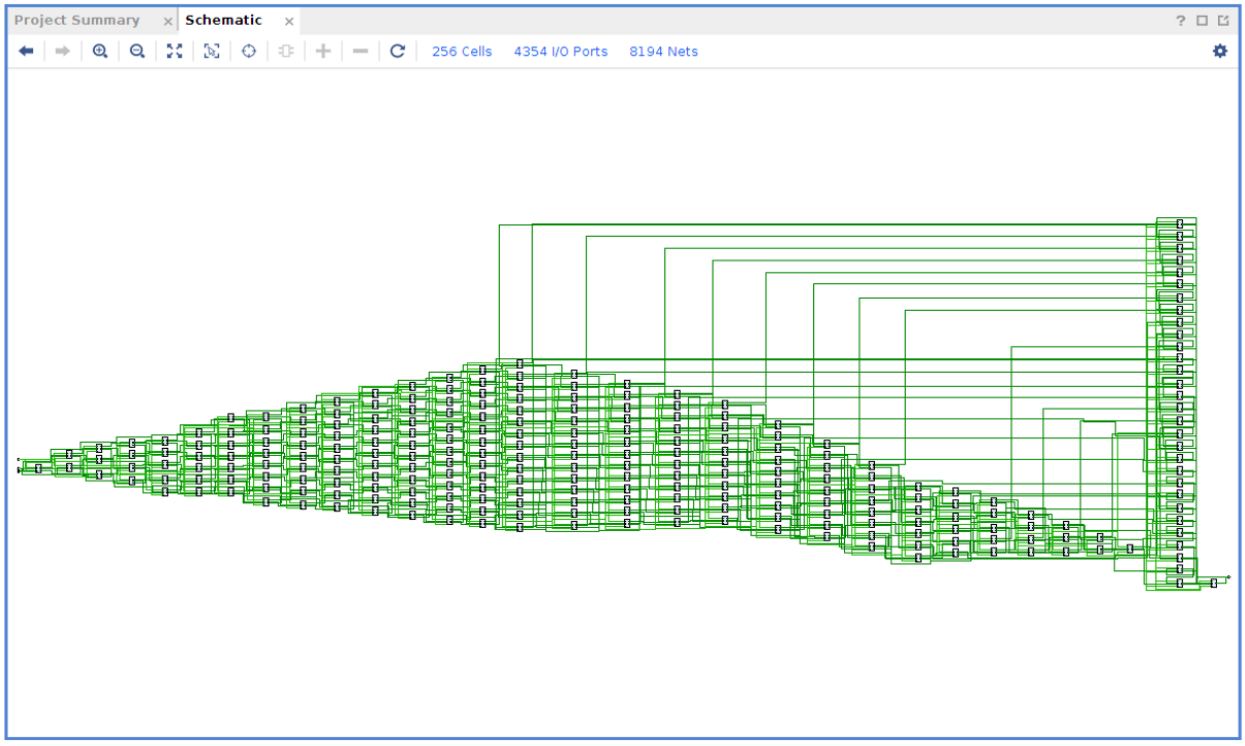
2.1 16x16 design

a. Waveform

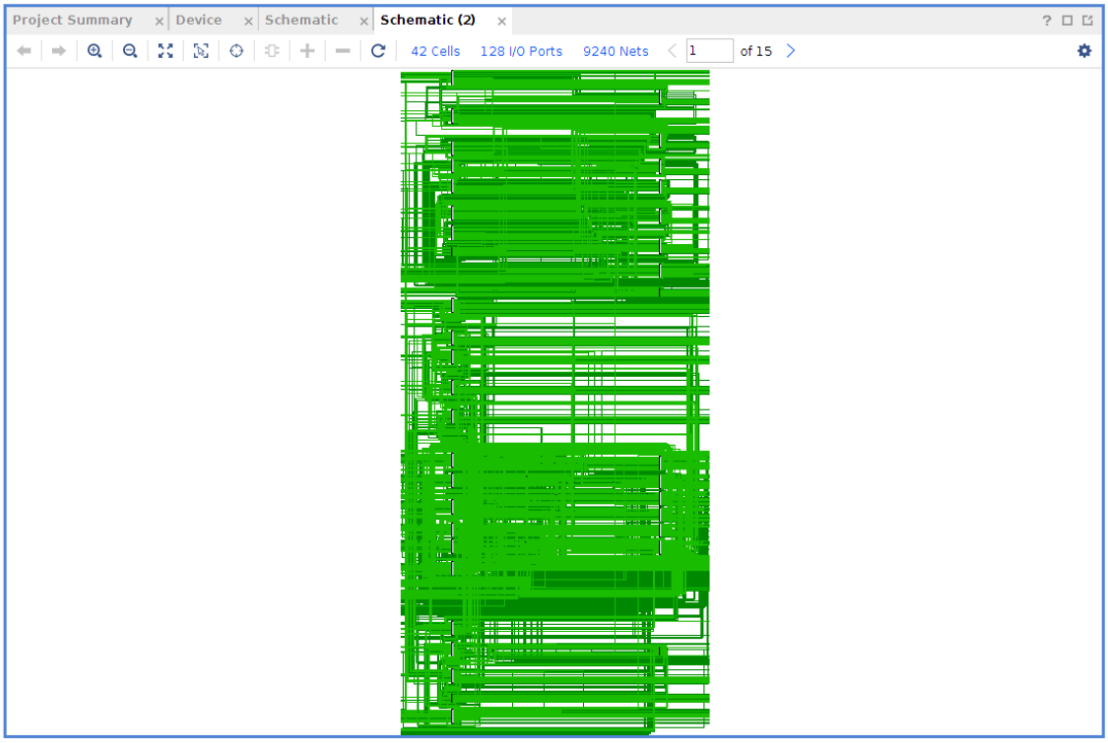
The input stream starts at yellow marker and results come out at blue marker.



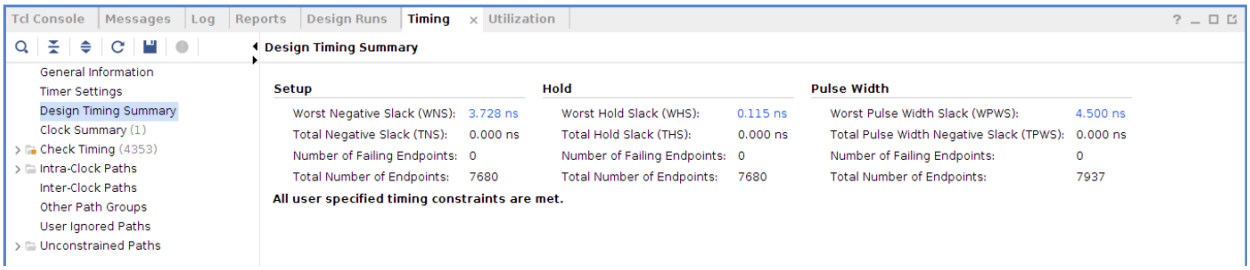
b. Schematic of elaborated design



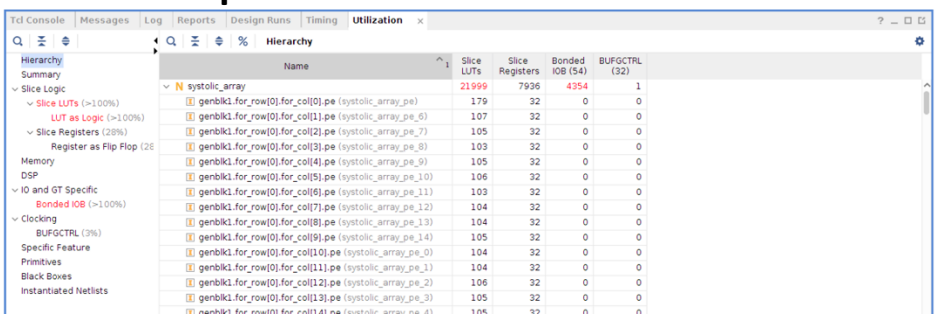
c. Schematic of synthesized design



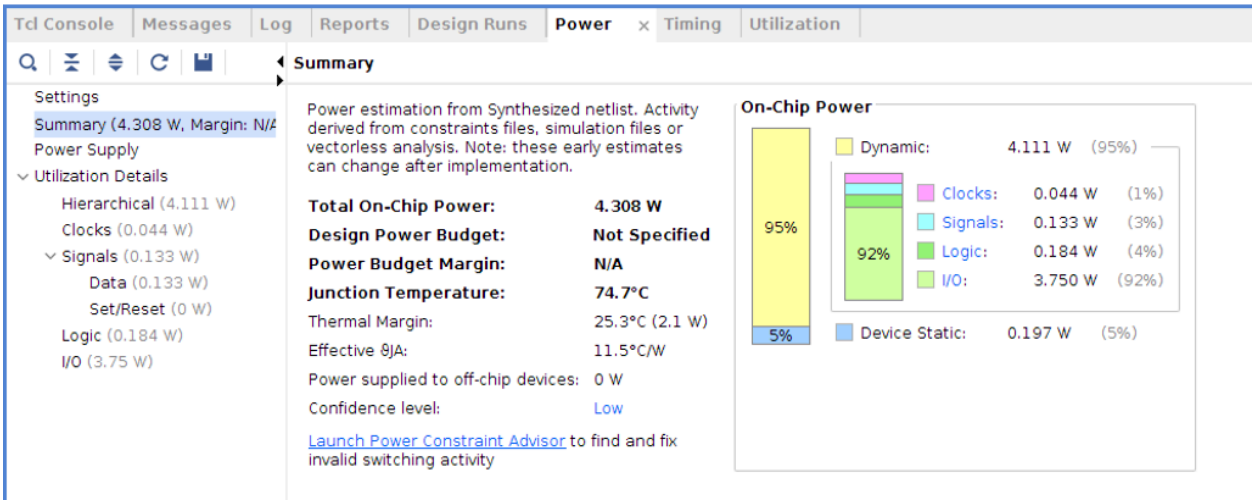
d. Timing report (clock cycle is 10 ns)



e. Utilization report



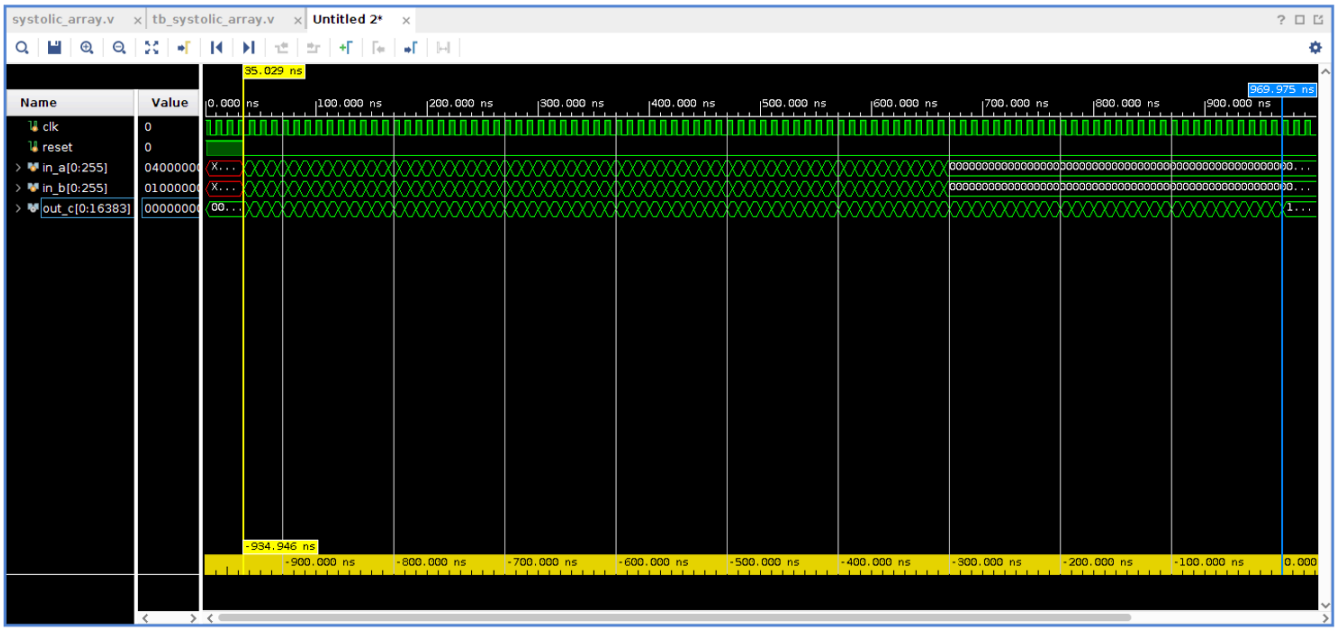
f. Power report



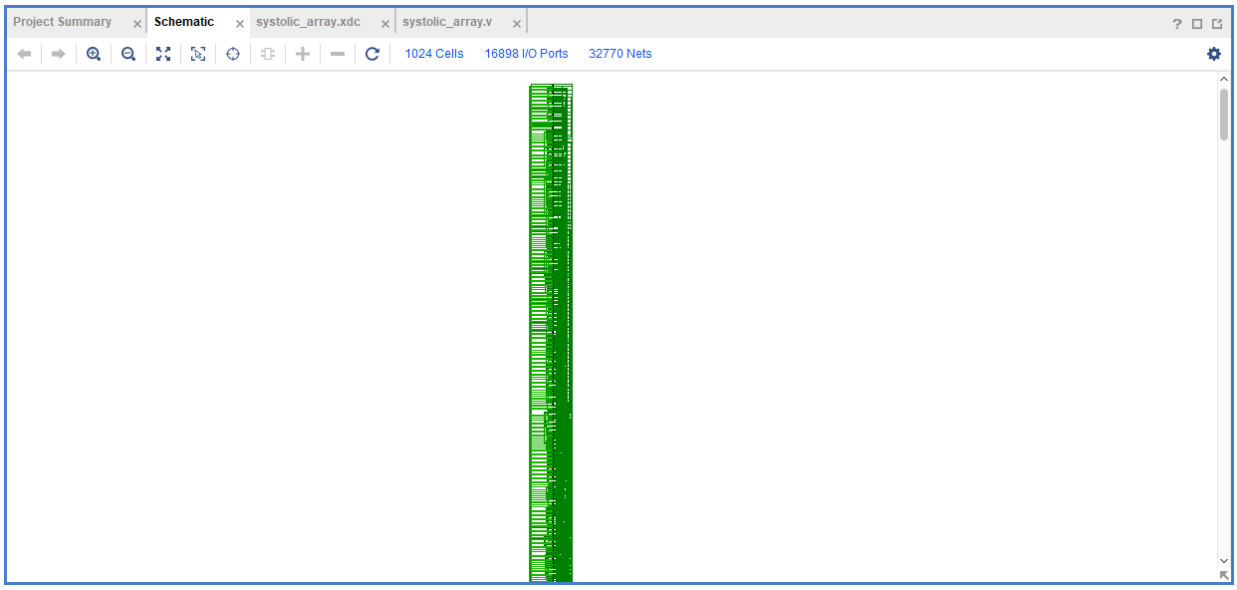
2.2 32x32 Design

a. Waveform

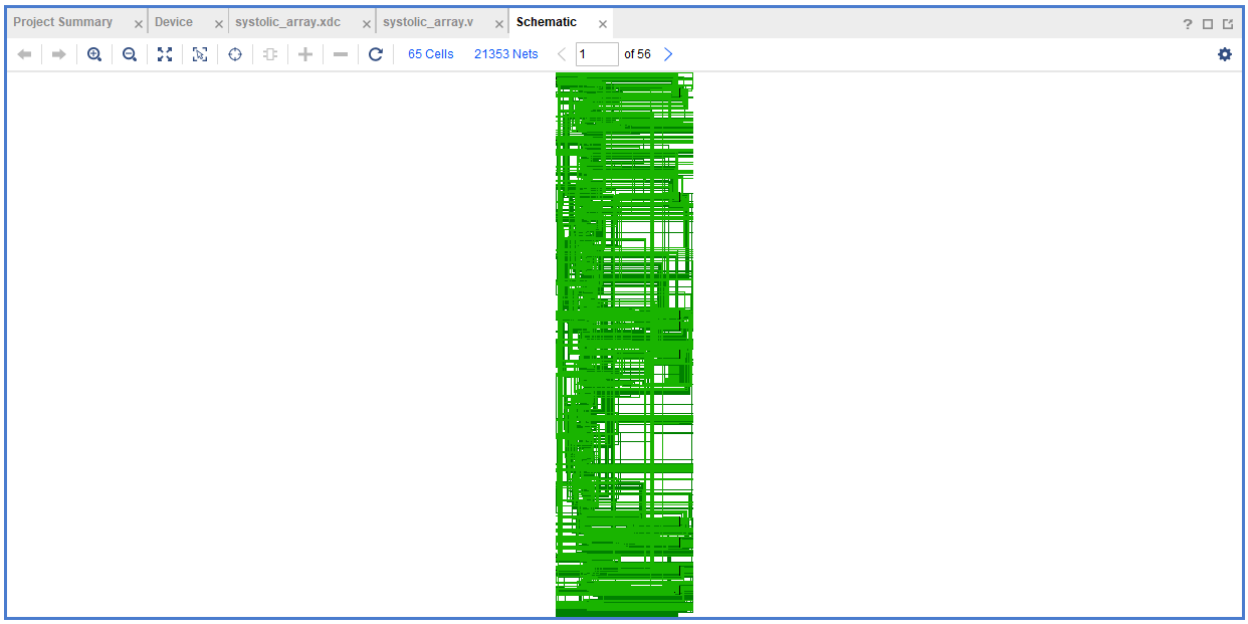
The input stream starts at yellow marker and results come out at blue marker.



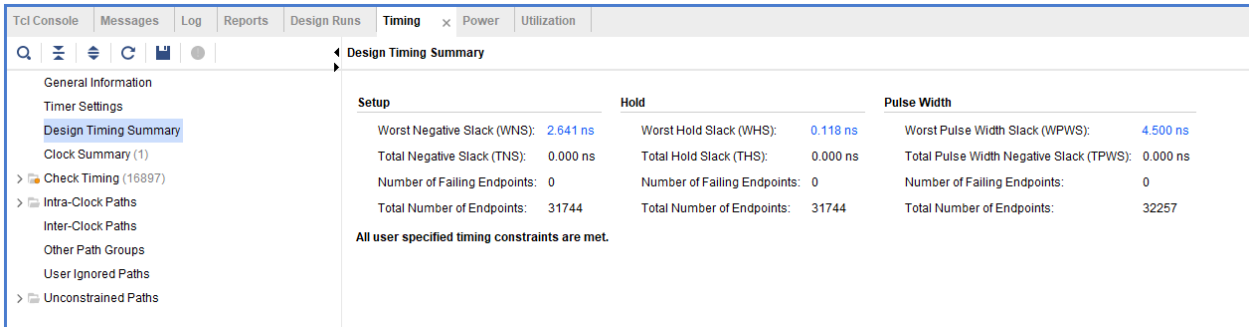
b. Schematic of elaborated design



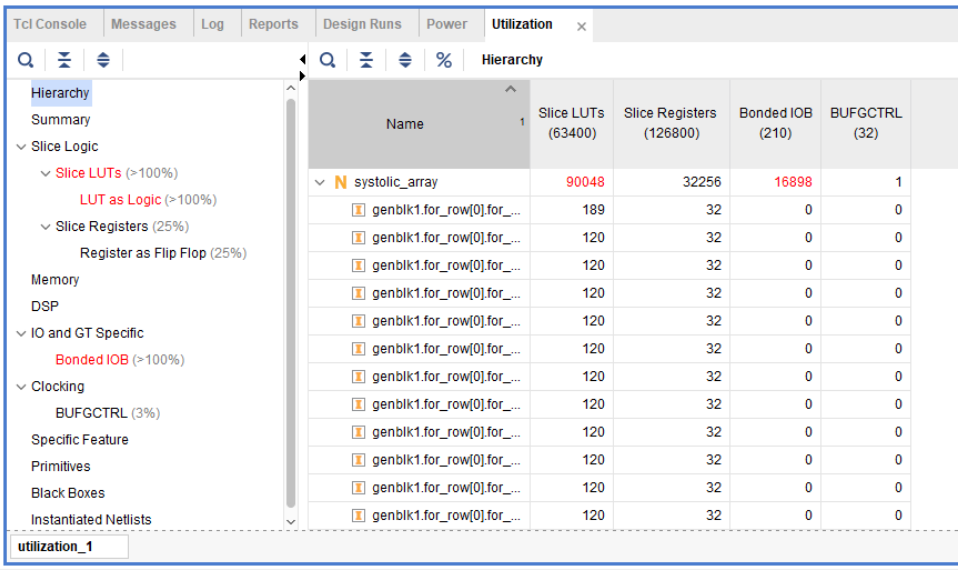
c. Schematic of synthesized design



d. Timing report (clock cycle is 10 ns)



e. Utilization report



f. Power report