VIS: SRC Technology Transfer Course - UC, Berkeley

Lab # 2 : Getting to know VIS:

Moving around the hierarchy, simulating, synthesizing and equivalence checking

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1 Introduction

We learn how to start up VIS and move around the hierarchy, get information about the nodes in the hierarchy, resynthesize a node and learn how to check equivalence, both combinational and sequential. Also we will start up Netscape and use it to get access to VIS command help files.

2 Hands on Experience

Problem #1 (compiling verilog into blif-mv)
Compile the verilog example **ex0.v** into blif-mv using **vl2mv**.

- Name of file created =

Problem #2 (node information)
Start VIS. Read in the blif-mv description. Print out the number of models in the top node of the hierarchy.

- Number of models in top level =
- Model names =
- Number of instances of "controller" module =

- Instance names =

Problem #3 (simulation)
"cd" to "controllerA". Simulate this node for 10 random vectors.

- Names of the inputs and outputs of this instance? =

Problem #4 (synthesis)

1. Write out the blif-mv file for this node as "cont.mv".
2. Write out the blif file for this node as "cont.blif"
3. Determine how many combinational nodes and latches there are using command "pns" (warning: you have to "init" first)
   - Number of combinational nodes =
   - Number of latches =
4. Start up SIS in another window and synthesize "cont.blif". Write out the resulting SIS network as "conts.blif"
5. Read in "conts.blif" into the present node (warning: be careful how you use this command - see command options). Determine:
   - Number of combinational nodes =
   - Number of latches =

Problem #5 (equivalence checking current node and root node)

1. check if current node "controllerA" is combinationally equivalent to "cont.mv"
2. check if current node is sequentially equivalent to "cont.mv"
3. "cd .." (You are now at the root node. If not you did something wrong when did read_blif in previous problem)
   - Did you do something wrong? =
   - If so what was it? =
4. check if root node is combinationally equivalent to ex0.mv
   - Was it combinationally equivalent? =
5. Check if root node is sequentially equivalent to ex0.mv
   - Was it sequentially equivalent? =