



Digital Design Verification

Lab # 42 Report

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Task 1:

```
File Edit View Search Terminal Help
[3]          integral      8      'h5
[4]          integral      8      'h57
...
[31]         integral      8      'h2c
[32]         integral      8      'h8a
[33]         integral      8      'h8e
[34]         integral      8      'h1d
[35]         integral      8      'h65
parity       integral      8      'hea
packet_delay integral      32     'h8
begin_time   time          64     40
depth        int           32     'd2
parent sequence (name) string    14   yapp_5_packets
parent sequence (full name) string 55   uvm_test_top.tb.yapp_uvc.agent.sequencer.yapp_5_packets
sequencer     string        40     uvm_test_top.tb.yapp_uvc.agent.sequencer
-----
UVM INFO ../sv/yapp_tx_seqs.sv(35) @ 50: uvm_test_top.tb.yapp_uvc.agent.sequencer@yapp_5_packets [yapp_5_packets] drop objection
UVM INFO /home/cc/mnt/XCELIUM2309/tools/methodology/UVM/CDNS-1.1d/sv/src/base/uvm_objection.svh(1268) @ 50: reporter [TEST_DONE] 'run' phase is ready to proceed to the 'extract' phase
--- UVM Report catcher Summary ---
Number of demoted UVM_FATAL reports : 0
Number of demoted UVM_ERROR reports : 0
Number of demoted UVM_WARNING reports : 0
Number of caught UVM_FATAL reports : 0
Number of caught UVM_ERROR reports : 0
Number of caught UVM_WARNING reports : 0
--- UVM Report Summary ---
** Report counts by severity
UVM INFO : 24
UVM_WARNING : 0
UVM_ERROR : 0
UVM_FATAL : 0
** Report counts by id
[RNTST] 1
[TEST_DONE] 1
[UVMTOP] 1
[router.tb] 3
[router.test.lib] 1
[yapp_5_packets] 3
[yapp_tx_agent] 3
[yapp_tx_driver] 6
[yapp_tx_env] 2
[yapp_tx_monitor] 2
[yapp_tx_sequencer] 1
Simulation complete via $finish() at time 50 NS + 49
/home/cc/mnt/XCELIUM2309/tools/methodology/UVM/CDNS-1.1d/sv/src/base/uvm_root.svh:457 $finish;
xcelium> exit
```

- Does the hierarchy match your expectations?

Yes, The hierarchy matches the expected results.

- Use the topology print to find the full hierarchical pathname from your test class to your UVC sequencer (e.g., tb.yapp.agent.sequencer) and write it below.

uvm_test_top.tb.yapp_uvc.agent.sequencer.run_phase.

- Use your topology to find the value of the is_active property of the YAPP agent. What is the value of the is_active variable when you printed the hierarchy?

The value of is_active variable is UVM_ACTIVE.

- Run a simulation with base_test and check which start_of_simulation_phase() method was called first. Which is called last? Why? You will need to set the right +UVM_VERBOSITY option to see the phase method messages.

As the simulation phases proceed according to bottom to top approach, the simulation phase method of driver was called first, and that of testbench was called the last.



Task 2:

```
File Edit View Search Terminal Help
-----
UVM_INFO ../sv/yapp_tx_monitor.sv(14) @ 0: uvm_test_top.tb.yapp_uvc.agent.monitor [yapp_tx_monitor] Simulation Phase - monitor
UVM_INFO ../sv/yapp_tx_agent.sv(33) @ 0: uvm_test_top.tb.yapp_uvc.agent [yapp_tx_agent] Simulation Phase - agent
UVM_INFO ../sv/yapp_tx_env.sv(18) @ 0: uvm_test_top.tb.yapp_uvc [yapp_tx_env] Simulation Phase - env
UVM_INFO router_tb.sv(18) @ 0: uvm_test_top.tb [testbench] Simulation Phase - testbench
UVM_INFO ../sv/yapp_tx_monitor.sv(10) @ 0: uvm_test_top.tb.yapp_uvc.agent.monitor [yapp_tx_monitor] This is Monitor - Run Phase
UVM_INFO router_test_lib.sv(26) @ 0: uvm_test_top [router_test_lib] Check Phase - testbench
UVM_INFO @ 0: uvm_test_top [CFGNRD] ::: The following resources have at least one write and no reads :::
default_sequence [/^uvm_test_top\.tb\.yapp_uvc\.agent\.sequencer\.run_phase$/] : (uvm_pkg::uvm_object_wrapper) '{}'
-
-----
uvm_test_top reads: 0 @ 0 writes: 1 @ 0
UVM_INFO router_test_lib.sv(75) @ 0: uvm_test_top [router_test_lib] Check Phase - set_config_test
UVM_INFO @ 0: uvm_test_top [CFGNRD] ::: The following resources have at least one write and no reads :::
default_sequence [/^uvm_test_top\.tb\.yapp_uvc\.agent\.sequencer\.run_phase$/] : (uvm_pkg::uvm_object_wrapper) '{}'
-
-----
uvm_test_top reads: 0 @ 0 writes: 1 @ 0

--- UVM Report catcher Summary ---

Number of demoted UVM_FATAL reports : 0
Number of demoted UVM_ERROR reports : 0
Number of demoted UVM_WARNING reports: 0
Number of caught UVM_FATAL reports : 0
Number of caught UVM_ERROR reports : 0
Number of caught UVM_WARNING reports : 0

--- UVM Report Summary ---

** Report counts by severity
UVM_INFO : 18
UVM_WARNING : 0
UVM_ERROR : 0
UVM_FATAL : 0
** Report counts by id
[CFGNRD] 2
[RNTST] 1
[UVMTOP] 1
[router_tb] 1
[router_test_lib] 5
[testbench] 1
[yapp_tx_agent] 3
[yapp_tx_env] 2
[yapp_tx_monitor] 2
Simulation complete via $finish(1) at time 0 FS + 179
/home/cc/mnt/XCELIUM2309/tools/methodology/UVM/CDNS-1.1d/sv/src/base/uvm_root.svh:457 $finish;
xcelium> exit
```

- You should get a configuration usage report from `check_config_usage()`. Why do you get this?

The output of `check_config_usage()` is 0 in the report as there are no mismatches in the simulation.

https://github.com/Muhammad-Asim5/Uvm_Labs.git