Lab 3

Creating HTAX packet class

Due date

Sep 16, 2024 11:59 PM CST

Table of content

Academic Integrity

The following actions are strictly prohibited and violate the honor code. The minimum penalty for plagiarism is a grade of zero and a report to the Aggie honor system office.

- Sharing your solutions with a classmate.
- Uploading assignments to external websites or tutoring websites
- Copying solutions from external websites or tutoring websites
- Copying code from a classmate or unauthorized sources and submitting it as your

Introduction

In this lab, you will apply principles of object-oriented programming in SystemVerilog. You will learn the basics of the UVM framework and use one component of the UVM framework called the sequence_item class. You will also use randomization and constraints in your test bench to create your stimulus.

Design Under Test

The DUT is the HyperTransport Advanced X-Bar whose specifications are mentioned in this document: HTAX_specification_v014.pdf.

Environment Setup

1. Log in to the Linux server. Use a secure shell to remote login to hera.ece.tamu.edu

Start SSH with X11 Forwarding enabled (-X). X11 forwarding allows you to run graphical applications such as Cadence tools from the remote server and have their graphical user interfaces (GUIs) displayed on your local machine.

```
ssh -Y <netid>@olympus.ece.tamu.edu
load-csce-616
```

2. Accept the assignment's repository on GitHub Classroom: https://classroom.github.com/a/9OsJdVrf
3. Go through the design specifications and understand it clearly.
4. Clone your lab repository on the Linux server.
5. Open the file tb/htax_packet_c.sv and complete all TO DOs.
6. Open the file tb/top.sv and complete all TO DOs.
7. Debug any eventual error during compilation.

8. Open the file waves.shm in simvision and check the waveform of all variables defined in top.sv
9. Save the waveform as waveform.png in the sim directory (Your waveform should clearly show the clock, data, data length, and port number)

Deliverables

Commit and push all your changes to your remote repository.

Your repository must include the following:

1. design directory
2. sim directory containing the waveform file (waveform.png)
3. tb directory containing the updated testbench

Important note: To get full credit, you must upload all the required files and directories and strictly name your files according to the requirements.