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1 Introduction

All deliveries can be found at http://firmware-developments.com/WEB/P6x/RTL_MMU/ and are in plained text format except 2 source files that are encrypted (AES).

- mmu.v
- test_mmu.v

A python script is provided to decrypt those 2 files and once your payment is accepted we give you the key to decipher it by email.

2 Deliveries Description

2.1 cocotb/drivers/amba.py

Updated Amba drivers. Original file coming with Cocotb has be replaced by that one.

Original location : $CocotbHome/cocotb/drivers

2.2 doc

Directory containing all documents.

2.2.1 SystemMMU_func.pdf

System MMU functional specification

2.2.2 TestBench_Description.pdf

Provides an overview of the testbench structure as well as its different components (drivers, generator)

2.3 hdl

Directory containing all Verilog hdl source files.

2.3.1 mmu.v

Top level MMU.

Instantiate the below modules.

2.3.1.1 axi_data_channel.v

Buffered AXI4 data channel.

Instantiate the below module.

2.3.1.1.1 fifo.v

Fifo description.

2.3.1.2 ram_sp_sr_sw.v

SRAM model. Should be replaced by a model of your targeted library.

2.3.1.3 mmu_parameter.v

Contains all Verilog parameters used in the MMU description.

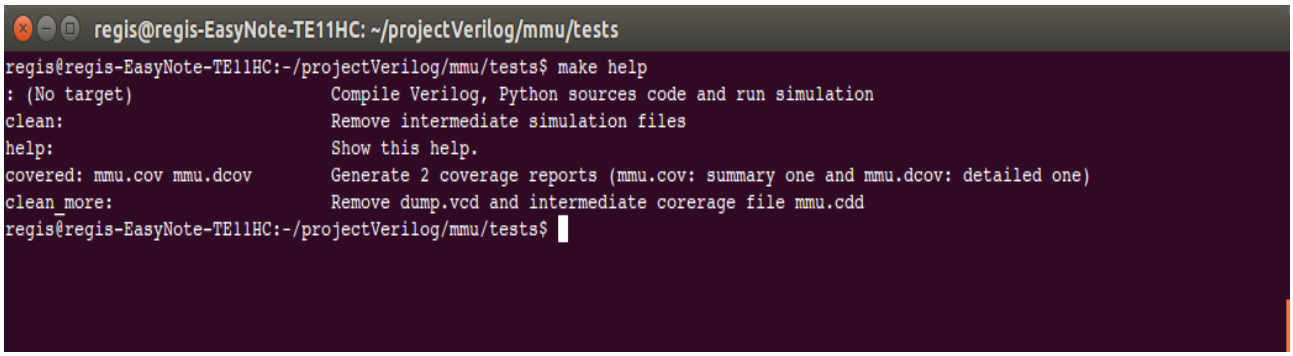
2.3.1.4 tscale.v

Include definition of timescale parameter.

2.4 tests

Contains files relative to MMU verification, testbench and test coverage.

2.4.1 Makefile



2.4.2 *.gtkw

GTKWAVE save files. Contains MMU signals lists to be analyzed with GTKWAVE (waveform viewer)

2.4.3 top_mmu.v

Top level mmu.

All inputs vectors from MmuTB are delayed before being provided to DUT.

All outputs vectors form DUT are delayed before being provided to MMUTB

Objective is to avoid any signals race condition.

2.4.4 test_mmu.py

Main test program developed in Python.

2.4.5 sim.log

Simulation log file (from cocotb and icarus verilog tools)

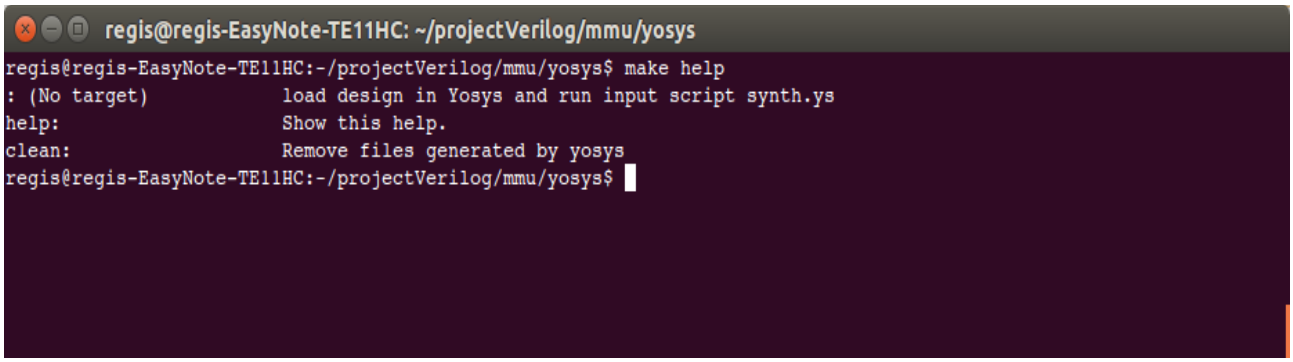
2.4.6 mmu.cov & mmu.dcov

Coverage reports (summary and detailed ones) generated from covered tool.

2.5 yosys

yosys synthesis suite is used to check that design is synthetizable.

2.5.1 Makefile



2.5.2 synth.ys

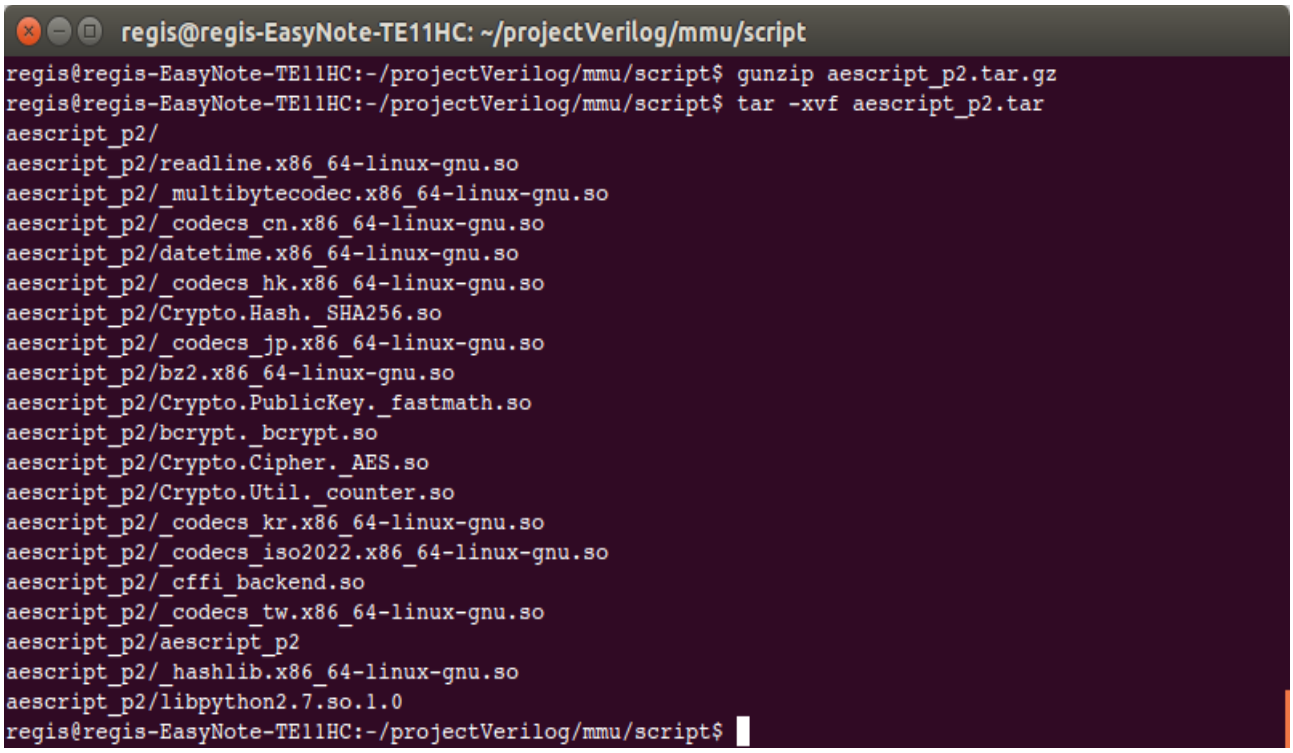
Synthesis script.

2.6 Script

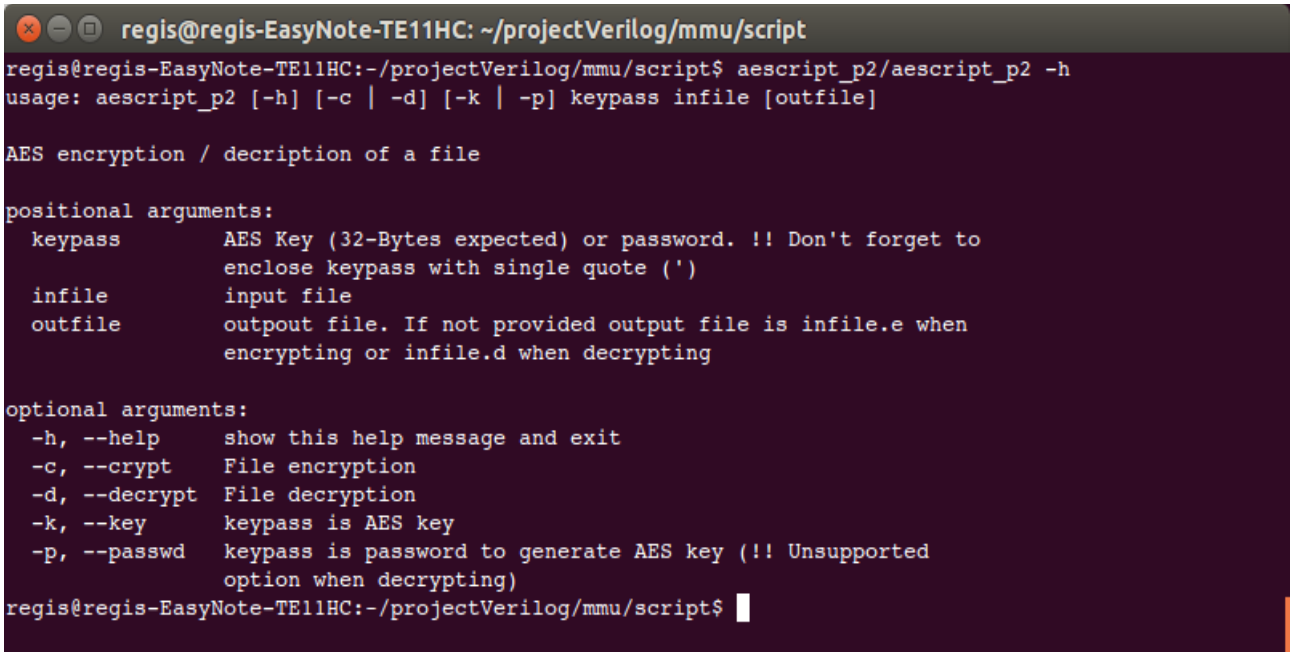
An executable (Linux only) python script is provided to decrypt encrypted files.

It comes as a compress tar file.

Before being able to use it, you have to execute following commands:



2.6.1 aescript_p2



You will need to execute that script to decrypt the 2 encrypted files:

- mmu.v.e
- test_mmu.py.e

To decrypt test_mmu.py.e, use the below command (replace 'xxxx' with the provided key).