VTR

A brief introduction to VTR

Data Storage Networks(DSN)

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Features

- Benchmarks consisting of real applications that contain both memories and multipliers.
- Packing/Clustering support for FPGA logic blocks with widely varying functionality
- A front-end Verilog elaborator that has support for hard blocks.
- The flow is currently area-driven. We are currently working on adding timing information back into the CAD flow.

Flow

Input:

- User circuit
  - Verilog
  - Blif
- FPGA architecture
  - FPGA architecture description language
- Output:
  - placed-and-routed FPGA.

Installing

- Could be installed in
  - Linux
  - Cygwin
- Make problems
  - Package dependencies
    - /bin/sh: ctags: not found
      - apt-get install exuberant-ctags
  - Libraries
    - /usr/bin/ld: cannot find -ltermcap
      - sudo apt-file update
      - apt-file search libtermcap.so
      - Install the appropriate dev package

A sample test

- Make test
- run_quick_test.pl

```
ali@ali-N82JQ:~/vtr_release$ ./run_quick_test.pl
================================================
Test Verilog-to-Routing Build Infrastructure
================================================

Testing ODIN II:  [PASSED]

Testing ABC:  [PASSED]

Testing VPR:  [PASSED]

Test complete
ali@ali-N82JQ:~/vtr_release$
```

A benchmark

- Set env_variable in .bashrc

```
# ~/.bashrc: executed by bash(1) for non-login shells.
# see /usr/share/doc/bash/examples/startup-files (in the package bash-doc)
# for examples
export REGRESSION_BASE_DIR=/home/ali/vtr_release/reg_test
```

- Run test scripts

```
ali@ali-N82JQ:~/vtr_release/reg_test/TESTS$ ../SCRIPTS/run_reg_tests.pl small_reg_test.txt local >& out.txt
ali@ali-N82JQ:~/vtr_release/reg_test/TESTS$ ../SCRIPTS/parse_reg_tests.pl small_reg_test.txt
ali@ali-N82JQ:~/vtr_release/reg_test/TESTS$ more reg_test_results.txt
Regression Test
Test case sample_test_1:
[Fail] k6_N8_memSize32768_memData32.xml-ch_intrinsics.v route_time: test = 1.16 golden = 3.81
[Fail] k6_N8_memSize32768_memData32.xml-diffeq1.v route_time: test = 10.74 golden = 5.93
```