DRC AND PEX USING PEGASUS AND QUANTUS

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DRC

- Files Required:
  - A DRC Rule file (.pvl) that is given by the foundry.
  - A gds file generated from innovus after pnr.
- Steps to run DRC from Innovus terminal:
  - Launch Innovus and load the design.
  - Type the following on the Innovus terminal:

run_pegasus_drc sky130_drcRules.pvl -mapfile streamOut.map -stream_out -merge ../sky130_osu_sc_t18/18T_ms/gds/*.gds → this command generates a temporary gds file

Command Breakdown:

-mapfile → specify the layer map file
-stream_out → generates gds file
-merge → specify the path to leaf cells gds files

- Outputs:
  - design_name.sum - gives the summary of the drc run
  - design_name.ascii - specifies the error markers
- To run DRC from the command line:

pegasus -drc -ui_data -gds mult_seq.gds -tc mult_seq -run-dir ./DRC/ sky130_drcRules.pvl → this command requires a gds file to be generate already

Command Breakdown:

-tc → specify the name of the top cell of the design
-run-dir → specify the name of the run directory

- To generate a gds file:
  - Launch Innovus and load the design.
  - On the Innovus terminal, type the following:

streamOut mult_seq.gds -mapFile ./streamOut.map -libName DesignLib -structureName mult_seq -merge ../sky130_osu_sc_t18/18T_ms/gds/*.gds

PEX

- Go the Innovus directory (cd pnr)
- Edit the setup.tcl to add the qrcTechfile. The qrcTechfile is generated by simulating the ict file provided by the foundry using Techgen.
- Edit innovus_config.tcl to set the effort level for RC extraction.
- make
- Results can be seen in rc_typ.spef.
- To run from Innovus command prompt:
    1. setExtractRCMode -engine postRoute -effortLevel <specify the effort level>
    2. extractRC
    3. rcOut -spef SPEF/<file.spef>