

Hog (HDL on git): a collaborative HDL management tool

Thursday, May 27, 2021 9:48 AM (18 minutes)

Coordinating firmware development among many international collaborators is becoming a very widespread problem in high-energy physics. Guaranteeing firmware synthesis reproducibility and assuring traceability of binary files is paramount.

We devised Hog (HDL on git), a set of Tcl scripts (no external tool or library is needed) that tackles these issues and is deeply integrated with HDL IDEs (Xilinx Vivado Design Suite/ISE PlanAhead, Intel Quartus Prime).

Hog assures absolute control of HDL source files, constraint files, Vivado/Quartus settings and guarantees traceability by automatically embedding the git commit SHA and a numeric version into the binary file, also automatically renamed.

Hog allows the IDE GUI to be used normally, so developers can get quickly up to speed: clone repository, run Hog script, work on your IDE.

Hog works on Windows and Linux, supports IPbus, Sigasi and provides pre-made yml files to set up a working CI on Gitlab with no additional effort.

TIPP2020 abstract resubmission?

No, this is an entirely new submission.

Funding information

Primary authors: GONNELLA, Francesco (University of Birmingham (GB)); CAMPLANI, Alessandra (University of Copenhagen (DK)); Dr CIERI, Davide (Max-Planck-Institut fur Physik (DE)); GIANGIACOMI, Nico (Universita e INFN, Bologna (IT)); PECK, Andrew (Boston University (US)); Dr BIESUZ, Nicolo Vladi (INFN Sezione di Pisa, Universita' e Scuola Normale Superiore, P)

Presenter: GONNELLA, Francesco (University of Birmingham (GB))

Session Classification: Readout: Trigger and DAQ

Track Classification: Readout and Data Processing: Readout: Data Transfer Links and Networks