

Vivado Isolation Verifier Release Notes

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Introduction

This document describes changes to the Vivado Isolation Verifier (VIV) software from release to release. Please see the Vivado Isolation Verifier Users Guide (v1.81) for background information on VIV and usage instructions.

Summary

Fixed bugs in IDF-4, IDF-5 and IDF-6 checks to reduce false positives and have proper handling of HD.ISOLATED_EXEMPT flags. Also, modified messages in IDF-4 and IDF-5 to make them less confusing.

Changes from 1.79 to 1.81

1. Fixed a bug in IDF-4 due to which sometimes it failed to report adjacency faults for some specific tiles.
2. Fixed a bug in IDF-4 due to which sometimes it might report false positives if there are top level pblocks.
3. Changed message of IDF-4 so that there is no confusion between logical partitions and physical pblocks.
4. Changed message of IDF-5 to print names of isolated partitions instead of pblocks. Also, made a modification in the message to clearly convey the case when multiple logic from isolated partitions are placed on the same tile.
5. Fixed a bug in IDF-5 and IDF-6 where it was not correctly handling tiles having cells with HD.ISOLATED_EXEMPT property set.

Changes from 1.78 to 1.79

1. Fixed a bug in IDF-6 where it was not correctly reporting violations for nets with loads in multiple isolation regions.

Changes from 1.76 to 1.78

2. Fixed a bug in IDF-3 where it was not correctly reporting violations if package pins were listed as either of GLOBAL_CLK, VREF, VRN, or VRP, even though they were used as data pins.
3. Fixed a bug in IDF-5 where it was not correctly reporting tile adjacency violations when logic placement from different Isolation modules were not separated by a tile.

Changes from 1.72 to 1.76

4. Suppressed debug statements appearing in the Tcl console of Vivado. To enable debug logging, before running the DRCs/VIV, run the following command in the Vivado Tcl prompt:
`set ::tclapp::xilinx::idf::enable_debug 1`

5. Fixed an issue where sometimes warning messages regarding `get_sites` command could be seen.

Changes from 1.63 to 1.72

6. Added support for PCIe3. Suppressed warning messages in `check_fence_pips`.
7. Request #924637 fixed a spelling error in an output message.
8. The test for top-level logic bridging the fence was incorrect. It did not filter out unused tiles.
9. Performance optimization of IDF-6 intra-region PIP checking. Algorithm is to gather tiles surrounding floorplan rectangles rather than examining all intra-region nets.
10. Added support for HD.ISOLATED_EXEMPT.
11. Rewrote IDF-2 to track changes in Vivado Tcl. New implementation is more straightforward.
12. Added reporting to IDF-1 of global clock nets, inter-region nets and HD.ISOLATED_EXEMPT nets.

Changes from 1.50 to 1.63

13. Improved the discrimination for checking PIPs in the fence. The violation message changed accordingly. The old message was, "Inter-region routing cannot use programmable interconnect points outside the regions." The new message is, "Routing cannot use programmable interconnect points separating isolated regions."
14. Improved performance and reporting of PIP checking.
15. Added support for additional transceiver types. Previously, only GTX transceivers were supported. Added support for GTH, GTP and GTY. Fixed a typo regarding LAGUNA_TILE categorization. Included previously excluded power nets in checking in intra-region net checking.
16. Fixed a coding error in code to determine whether a tile is included in an area range. Added support for left-side GTH and GTP interconnect types.
17. Fixed a coding error that was causing IDF-1 to fail on certain platforms. The code assumed a particular environment variable would be defined. Now all references to environment variables tolerate undefined variables. Fixed a logical vs physical ownership error in the check that inter-region signals have loads in exactly one isolation group.
18. Excluded top-level routing from the check on the drivers of a tile.
19. Modified the check for conflicting intra-region nets to apply to interconnect tiles only. Improved naming and organization of the code.
20. Modified intra-region net tile check to apply to all interconnect tiles, not just ones outside the floorplan regions.

- 21. Added detail to intra-region net violations.
- 22. Improved performance by reducing the number of calls to `get_cells`.
- 23. Added support for isolated regional clock buffer checking. Fixed a defect in global clock enumeration from revision 61. Checks appropriate to inter-region signals were mistakenly being applied to a broader set of signals. Fixed. Fixed a warning in IDF-3 due to extraneous arguments being supplied in the creation of a DRC violation object. Fixed `check_net_tiles` to only look at inter-region nets.