VC SpyGlass CDC
Analyzing Results Guide

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Comparing VC SpyGlass CDC Results with SpyGlass CDC

VC SpyGlass CDC ships with the `sg_results_diff.pl` script to help you compare the VC SpyGlass CDC results (generated in the SpyGlass Use Model) with the results generated by SpyGlass CDC. By default, the script is available in the `$VC_STATIC_HOME/bin` directory.

The `sg_results_diff.pl` comparison script takes a `CDC-detailed-report.rpt` report generated by SpyGlass as input and the corresponding report generated by VC SpyGlass CDC and compares the two reports structurally and semantically.

The script compares each section of the two reports and for each rule listed in a Section of the report, the script generates the similar and dissimilar results and lists the results in HTML format. You can click the various hyperlinks in the HTML page to analyze the results generated by the two CDC tools. Figures 1 shows a sample of the generated HTML file.

Section A: Run Information

Attributes	Run1	Run2
Goal(s)	Setup, Struct, Functional	Setup, Struct, Functional
Machine Used	vgintbw125	vgintbw39
Memory Used (in KB)	49015560	2275328
Total Time (in sec)	4204	137.78
File Path	/remote/vgrnd100/sonamq/regressionTesting/TD_Regr/BMs/AMD_L2/AMD_L2_Unified/sg_CDC-detailed-report.rpt	/remote/vgrnd100/sonamq/regressionTesting/TD_Regr/BMs/AMD_L2/AMD_L2_Unified/vcst_rtdb/.internal/spyglass/cdc/consolidated_reports/l2_cdc_cdc_verify_struct/CDC-detailed-report.rpt

1) Top-level Overview of the result differences:

Section	Category	Run1 (Total Count)	Run2 (Total Count)	Run1 Only	Run2 Only	Run1 and Run2(with different attribute
Section B: Design Information	Number of black-boxes	1785	1785	0	0	0
Section C: Setup Information	Number of User defined Parameter Values	15	15	0	0	0
Section C: Setup Information	Number of Clocks	130	130	0	0	0
Section C: Setup Information	Number of Clock Domains	130	130	0	0	0
Section C: Setup Information	Number of Resets	2	2	0	0	0
Section C: Setup Information	Number of Black-box data-ports not specified using any of 'assume_path', 'signal_in_domain','clock', 'reset', 'set_case_analysis', 'quasi_static' or 'abstract_port' constraints	6	5	1	0	0
Section C: Setup Information	Number of signals specified using 'generated_clock' constraint	0	128	0	128	0
Section C: Setup Information	Number of Propagated Clock signals	130	130	0	0	0
Section C: Setup Information	Number of Propagated Reset signals	2	2	0	0	0
Section D: Setup Errors	Clock_info05b	0	640	0	640	0
Section D: Setup Errors	Setup_port01	215	215	0	0	109
Section D: Setup Errors	Setup_blackbox01	3	4	0	1	1
Section E: CDC Analysis and Verification	Crossings	3723	3995	0	272	0
Section E: CDC Analysis and Verification	Ac_unsync01, Ac_unsync02, Ac_sync01, Ac_sync02 Combined	3723	3995	0	272	0

FIGURE 1.

Running the Script

Use the following command to compare the SpyGlass-generated `CDC-detailed-report.rpt` with the VC SpyGlass CDC -generated `CDC-detailed-report.rpt`:

```
sg_results_diff.pl <Spyglass-generated-report.rpt> <SGUM-generated-report.rpt>
```

For example,

```
$VC_STATIC_HOME/bin/sg_results_diff.csh SG_CDC-detailed-report.rpt VC_CDC-detailed-report.rpt -alldata
```

NOTE: *Note that the SpyGlass setup should have the set_option -report {`CDC-detailed-report`} specified in the project file to enable the `sg_results_diff.pl` to perform the comparison. In addition, note that the first argument of the command must be the report generated by SpyGlass CDC and the second argument must be the report generated by VC SpyGlass CDC.*

You can specify the following options with the above command:

- `-outfile <file-name>` (Optional): File path for output HTML file (default: ./diff.html)
- `-alldata` (Optional): Shows the same attributes in Run1 and Run2. By default, the same attributes in the two runs are not shown.
- `-conv` (Optional): Compares the `Ac_conv_detail.rpt`. By default, the script compares `CDC-detailed-report.rpt`. Note that the SpyGlass setup should have the `set_option -report {Ac_conv_detail}` specified in the project file to enable `sg_results_diff.pl` to perform the comparison.
- `-glitch` (Optional): Compares the `Glitch_detailed.rpt`. By default, the script compares `CDC-detailed-report.rpt`. Note that the SpyGlass setup should have the `set_option -report {Glitch_detailed}` specified in the project file to enable `sg_results_diff.pl` to perform the comparison.
- `-skip_check_stage` (Optional): Skips printing the failed stage
- `-skip_html` (Optional): Skips html generation to measure comparison algorithm's performance only
- `-skip_reason_for_sync` (Optional): Skips comparison of 'Failure Reason' and 'Sync Scheme' for synchronization violations

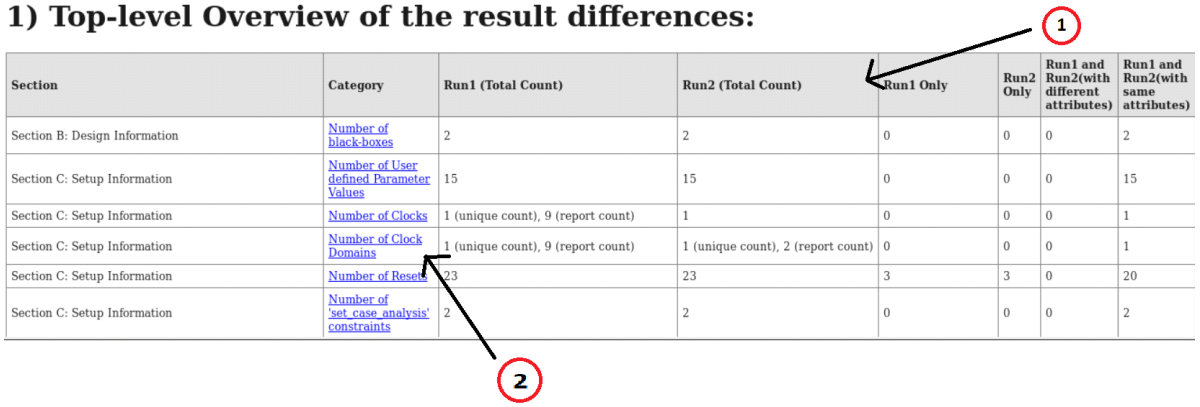
- `-match_split_bus_for_sync` (Optional): Splits bus depending on higher dimension for the synchronization violations (combined_sync_data). If the source is a bus, the source is split depending on higher dimension. If the source is not a bus, the destination is split depending on higher dimension.
- `-match_only_bus_for_sync` (Optional): Matches only the bus names for synchronization violations (combined sync data).
- `-match_only_bus_for_RDC` (Optional): Matches only the bus names for RDC violations (Ar_resetcross01).
- `-splitLimit` (Optional): Limits the number of violations per page. Default is 5000. You can specify any number above 500. To avoid splitting, specify 0 to this option.
- `-continue_past_failed_rules <rules-list>` (Optional): Continues the comparison beyond the failed rules. You can specify `all` and the script does not stop at failure of any rule and continues the comparison until the end.
- `-listRules` (Optional): Lists the rules that can be used for the comparison.
- `-enableRules <comma separated rules list>` (Optional): Performs the comparison for the specified rules only. The command ignores all other rules for the purpose of the comparison. Use the `-listRules` argument to get the list of supported rules.
- `-disableRules <comma separated rules list>` (Optional): Performs the comparison for all rules other than the specified rules. The command ignores the specified rules and considers all other rules for the purpose of the comparison. Use the `-listRules` argument to get the list of supported rules.
- `-perfFile <filename>` (Optional): Specifies the path where the output-time log file is generated. By default, the log file is generated in `./perf_sg_results_diff.log`.
- `-showFormat <ruleName, ruleName>` (Optional): Use this argument to perform manual analysis to conclude mismatched results between SpyGlass CDC and VC SpyGlass CDC SGUM. This argument generates the format in which an entry should be specified in the force match file for the specified pair of rule names. List the violations that must be matched in this format in a file. Specify this file name with the `-forcematch` argument.

- `-forceMatch <filename>` (Optional): Use this argument to perform manual analysis to conclude mismatched results between SpyGlass CDC and VC SpyGlass CDC SGUM. Forcefully matches the violations from the comparison.

After comparison, the script generates an HTML file, as shown in Figures 1, that you can view in any web browser to check the results of the comparison.

Analyze Differences and Similarities

This section describes how to use the generated HTML file effectively to see the differences in violations.



1) Top-level Overview of the result differences:

Section	Category	Run1 (Total Count)	Run2 (Total Count)	Run1 Only	Run2 Only	Run1 and Run2(with different attributes)	Run1 and Run2(with same attributes)
Section B: Design Information	Number of black-boxes	2	2	0	0	0	2
Section C: Setup Information	Number of User defined Parameter Values	15	15	0	0	0	15
Section C: Setup Information	Number of Clocks	1 (unique count), 9 (report count)	1	0	0	0	1
Section C: Setup Information	Number of Clock Domains	1 (unique count), 9 (report count)	1 (unique count), 2 (report count)	0	0	0	1
Section C: Setup Information	Number of Resets	23	23	3	3	0	20
Section C: Setup Information	Number of 'set_case_analysis' constraints	2	2	0	0	0	2

FIGURE 2. Top-level overview of the result differences Table

The *Top-level overview of the result differences* table contains the following columns as shown in Figures 2:

- Section
- Category
- Run1 (Total Count)
- Run2 (Total Count)
- Run1 Only
- Run2 Only
- Run1 and Run2 (with same attribute)
- Run1 and Run2 (with different attribute)

Section

These are the sections which are in CDC detail report. All other sub fields are categorized under these sections.

Category

These are main fields being compared with comparison script. All main reporting fields such as clocks, resets, black boxes, crossings, setup ports are reported in this section.

Once you click a hyperlink in (2) section, it will re-direct to a subsection and that contains the following links based on the availability. Following is the example for setup_port01:

FIGURE 3.

In Run1 only

Once user click on this link it will redirected to the section which report items which are only in Spyglass report (Missing in VC Spyglass CDC report).

In Run2 only

Once user click on this link it will redirected to the section which report items which are only in VC Spyglass report (Missing in Spyglass CDC report).

Both in Run1 and Run2 (with different attributes)

This link contains object which are partially matching. If main objects are matching and other attributes are not matching, such entries are reported under this section.

Example

A crossing for which the source and destination exactly match in both tools, but clocks are not matching will reports under this sections.

Both in Run1 and Run2 (with same attributes)

If two violations exactly watch in two reports, it will report under this section. To get this section -alldata option should be used with comparison script.

Run1 (Total Count)

Total object/violation count which are in Spyglass report.

Run2 (Total Count)

Total object/violation count which are in VC Spyglass report.

Run1 Only

Total object/violation count which are only in Spyglass report (Missing in VC Spyglass CDC report).

Run2 Only

Total object/violation count which are only in VC Spyglass report (Missing in Spyglass CDC report).

Run1 and Run2 (with same attribute)

Object/Violation count which are partially matching. If main objects are matching and other attributes are not matching, such Objects/Violations are reported under this section

Run1 and Run2 (with different attribute)

If two object/violation exactly watch in two reports, it will count under this section. To get this table column -alldata option should be used with comparison script.