Verification Continuum™

VC Verification IP AHB Performance Metrics Supported Through Verdi

Version S-2021.06, June 2021

SYNOPSYS®

Copyright Notice and Proprietary Information

Destination Control Statement

All technical data contained in this publication is subject to the export control laws of the United States of America. Disclosure to nationals of other countries contrary to United States law is prohibited. It is the reader's responsibility to determine the applicable regulations and to comply with them.

Disclaimer

SYNOPSYS, INC., AND ITS LICENSORS MAKE NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Trademarks

Synopsys and certain Synopsys product names are trademarks of Synopsys, as set forth at http://www.synopsys.com/company/legal/trademarks-brands.html.
All other product or company names may be trademarks of their respective owners.

Free and Open-Source Software Licensing Notices

If applicable, Free and Open-Source Software (FOSS) licensing notices are available in the product installation.

Third-Party Links

Any links to third-party websites included in this document are for your convenience only. Synopsys does not endorse and is not responsible for such websites and their practices, including privacy practices, availability, and content.

www.synopsys.com

Preface

About This Document

This document provides information about the performance metrics of AHB supported with Verdi.

Web Resources

- Documentation through SolvNet: https://solvnetplus.synopsys.com (Synopsys password required)
- Synopsys Common Licensing (SCL): http://www.synopsys.com/keys

Customer Support

To obtain support for your product, choose one of the following:

1. Go to https://solvnetplus.synopsys.com and open a case.

   Enter the information according to your environment and your issue.
2. Send an e-mail message to support_center@synopsys.com
   - Include the Product name, Sub Product name, and Product version for which you want to register the problem.
   - If applicable, provide the information noted in Appendix A, "Reporting Problems" on page 59.
3. Telephone your local support center.
   - North America:

     Call 1-800-245-8005 from 7 AM to 5:30 PM Pacific time, Monday through Friday.
   - All other countries:

     http://www.synopsys.com/Support/GlobalSupportCenters

Synopsys Statement on Inclusivity and Diversity

Synopsys is committed to creating an inclusive environment where every employee, customer, and partner feels welcomed. We are reviewing and removing exclusionary language from our products and supporting customer-facing collateral. Our effort also includes internal initiatives to remove biased language from our engineering and working environment, including terms that are embedded in our software and IPs. At the same time, we are working to ensure that our web content and software applications are usable to people of varying abilities. You may still find examples of non-inclusive language in our software or documentation as our IPs implement industry-standard specifications that are currently under review to remove exclusionary language.

Performance Metrics

The following is the list of AHB Performance Metrics and its description:

1 AHB Metrics Description

- `ahb_cinst_read_bus_bandwidth_percentage.tcl`: ahb_cinst_read_bus_bandwidth_percentage metric computes the bus bandwidth percentage of READ type transactions across all port instances
- `ahb_cinst_read_bus_bandwidth.tcl`: ahb_cinst_read_bus_bandwidth metric computes total bus bandwidth of READ type of transactions across all port instances
- `ahb_cinst_read_byte_count.tcl`: ahb_cinst_read_byte_count metric computes total number of bytes of all READ transactions across all port instances
- `ahb_cinst_read_percentage.tcl`: ahb_cinst_read_percentage metric computes percentage of READ only type of transaction amongst all transactions across all port instances
- `ahb_cinst_write_bus_bandwidth_percentage.tcl`: ahb_cinst_write_bus_bandwidth_percentage metric computes the bus bandwidth percentage of WRITE type transactions across all port instances
- `ahb_cinst_write_bus_bandwidth.tcl`: ahb_cinst_write_bus_bandwidth metric computes total bus bandwidth of WRITE type of transactions across all port instances
- `ahb_cinst_write_byte_count.tcl`: ahb_cinst_write_byte_count metric computes total number of bytes of all WRITE transactions across all port instance
- `ahb_cinst_write_percentage.tcl`: ahb_cinst_write_percentage metric computes percentage of WRITE only type of transaction amongst all transactions across all port instances
- `ahb_ctrans_avg_read_latency.tcl`: ahb_ctrans_avg_read_latency - This metric computes average time taken across all read transaction
- `ahb_ctrans_avg_write_latency.tcl`: ahb_ctrans_avg_write_latency - This metric computes average time taken across all the write transaction
- `ahb_ctrans_read_bus_bandwidth.tcl`: ahb_ctrans_read_bus_bandwidth metric computes total bus bandwidth of READ type transactions across all transactions at a given instance
- `ahb_ctrans_read_byte_count.tcl`: ahb_ctrans_read_byte_count metric computes total number of bytes of all READ transactions for a given instance
- `ahb_ctrans_read_count.tcl`: ahb_ctrans_read_count metric computes total number of READ type of transactions for a given instance
- `ahb_ctrans_write_bus_bandwidth.tcl`: ahb_ctrans_write_bus_bandwidth metric computes total bus bandwidth of WRITE type transactions across all transactions at a given instance
- `ahb_ctrans_write_byte_count.tcl`: ahb_ctrans_write_byte_count metric computes total number of bytes of all WRITE transactions for a given instance

- `ahb_ctrans_write_count.tcl`: ahb_ctrans_write_count metric computes total number of WRITE type of transactions for a given instance
- `ahb_trans_read_byte_count.tcl`: ahb_trans_read_byte_count metric computes total number of read byte count per transaction
- `ahb_trans_read_latency.tcl`: ahb_trans_read_latency - Total time taken by the AHB read transaction to complete. This value is the difference between begin time and end time of the transaction.
- `ahb_trans_write_byte_count.tcl`: ahb_trans_write_byte_count - Metric computes total number of write bytes count per transaction
- `ahb_trans_write_latency.tcl`: ahb_trans_write_latency - Total time taken by the AHB write transaction to complete. This value is the difference between begin time and end time of the transaction.