HPC/Data Center

Solution Brief

Overview and Goal

Synopsys and Arm have been collaborating for decades to enable mutual customers to optimize their Arm-based SoCs with the required design, verification, silicon IP, software security, and software quality solutions, along with comprehensive and PPA-maximized reference design flows. Together the companies are helping designers speed software development, streamline the co-verification of hardware and software, accelerate the realization of first-pass silicon success, and create energy-efficient Arm-based designs for high-performance computing and artificial intelligence (AI) applications. Synopsys and Arm are advancing secure, AI-enabled, and energy-efficient product innovations that are helping to shape both current and future markets.

Application Areas:

- High-Performance Computing
- Data Center
- Artificial Intelligence

Arm Technology:

- Arm Neoverse

Further Details:

- Arm | Synopsys Partnership
- Arm | Synopsys News
- Arm | Synopsys Blog

Challenge

The high-performance computing field has long been focused on - and highly successful in - delivering arduously crafted compute-engine complexes to power the solving of the world's most pressing and challenging scientific and engineering problems. With the convergence of AI and HPC, the field is seeing a solid move toward disaggregated and highly heterogeneous compute to power new workloads that can absorb another critical driver of HPC innovation – big data.

These vast amounts of data need to be met with the right kind of processing in the right place in the computing hierarchy – from deep in the core to all the way at the edge. This is driving a thrust toward augmenting right-sized and best-in-class CPU clusters with domain-specific-computing acceleration and further allying this to new ideas around in-place, disaggregated data processing.

The HPC field is growing in exciting ways and needs exciting innovations to power these new ideas to deliver exascale computing and beyond.

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Solutions and Benefits

Synopsys' full-flow solutions, including the Fusion Design Platform™, 3DIC Compiler Platform, Custom Design Platform, Verification Continuum® Platform, DesignWare IP, and Polaris Software Integrity Platform™, enable mutual customers to achieve their exacting targets to continue to bring to market, highly differentiated system-on-chips and systems-of-chips with Arm-based products.

- Synopsys' Fusion Design and Verification Continuum Platforms enable rapid development and best-in-class PPA and mW/GHz metrics for the Neoverse cloud-to-edge infrastructure cores
- The Synopsys 3DIC Compiler exploration-to-signoff solution enables efficient development of 2.5D and 3D Neoverse-based systems
- Arm-validated interoperability testing of Synopsys DesignWare Interface IP portfolio with Arm Neoverse processors deliver maximum system performance for Arm SystemReady compliance with Arm SystemReady compliance
- The Polaris Software Integrity Platform™ brings an integrated, easy-to-use solution that enables security and development teams to build secure, high-quality software faster

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