

HAPS

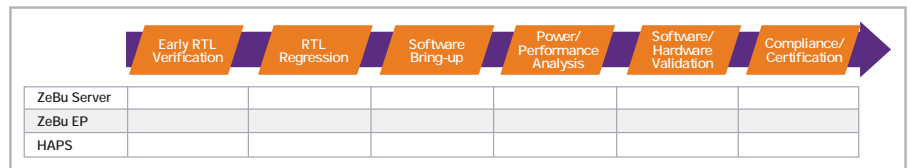
Pre-silicon Prototyping

Synopsys HAPS® prototyping solution dramatically accelerates software development, hardware verification, and system validation from individual IP blocks to processor subsystems to complete SoCs. HAPS is the de facto ASIC Pre-silicon Prototyping platform industry standard across the entire electronic supply chain from IP to semiconductor and system companies.

HAPS prototyping solution consists of proven, robust [hardware platforms](#) and HAPS ProtoCompiler [prototyping software](#), which are optimized to deliver the best performance. Solutions are available to support desktop or enterprise configurations. HAPS ProtoCompiler prototyping software builds on 20+ years of FPGA synthesis expertise built with the Synopsys [Synplify® FPGA synthesis product line](#).

Prototyping Use Cases

Synopsys offers the highest-performance Hardware-assisted Verification portfolio, with the most cost-effective platforms to cover all use cases.



RTL Regression—HAPS is ideal for IP RTL regressions for single-clock IPs. It allows fast execution of hardware and software. It is suitable for CPUs, GPUs, NPUs, and AI-accelerators.

Software Bring-up—HAPS can help validate low-level software drivers before software/hardware validation. Several debug capabilities allow developers to monitor and debug the execution software during the SoC system bring-up.

Software/Hardware Validation—HAPS prototyping systems are used when synthesizable RTL source code of the ASIC/system-on-chip design is available, allowing designers to develop software, verify SoC hardware, and enable system validation before the silicon is taped out.

Compliance/Certification—HAPS prototyping systems are capable of at-speed interface prototyping, due to the asynchronous capabilities of the HAPS [ProtoCompiler](#). The HAPS [IP Prototyping Kit](#) offers at-speed prototyping of Synopsys IP, allowing customers to run interoperability testing as well as compliance and certification.

