

Synopsys and Astera Labs

Astera Labs Accelerates Time-to-Market for High-Performance Computing Systems with Synopsys Cloud Solutions

“Astera Labs products are designed in the cloud, for the cloud. Operating exclusively in the cloud for product development has helped us differentiate by accelerating our design schedule by three-to-four months, which is like gold dust in today’s industry.”

~Sanjay Gajendra, Chief Business Officer, Astera Labs



Business

Astera Labs develops data and memory connectivity solutions that remove performance bottlenecks throughout the data center. Its silicon, software, and system-level connectivity solutions help realize the vision of artificial intelligence and machine learning in the cloud. Astera Labs is the first private semiconductor company in the world to use 100% cloud-based development, and from the beginning has designed its entire EDA and silicon solutions in the cloud.

Challenges

Astera Labs realized early on that data connectivity was not keeping up with the advances in AI and machine learning applications. With that realization came the decision to design silicon and system products to address bandwidth, capacity, and performance bottlenecks through the data center, resulting in faster and more efficient cloud and HPC deployments.

Faced with aggressive tapeout schedules, Astera Labs achieved success by going beyond the fabless model. The company leveraged its strong collaboration with Synopsys, scaled its design efforts in the Amazon Web Services (AWS) Cloud with Synopsys tools and Bring Your Own Cloud (BYOC) offering, and was able to develop more efficiently by utilizing the Synopsys FlexEDA pay-per-use model.

“By using Synopsys Cloud and BYOC, we are able to complete our chips in 30% less time and with higher quality, which is a significant time-to-market and competitive advantage.”

~Kalyan Mulam, Sr. VP of ASIC Engineering, Astera Labs

“Synopsys is one of our key partners for our EDA tools and services, and we are excited about the future possibilities of Synopsys Cloud for Astera Labs.”

~Jitendra Mohan, CEO and Co-Founder, Astera Labs

Benefits and Results Using the Synopsys Cloud Solution

Synopsys Cloud's industry-leading FlexEDA pay-per-use model in a BYOC deployment provided Astera Labs with the unique ability to dynamically scale with infinite computing power, and a flexible EDA tool licensing model on the AWS cloud.

The powerful combination of Synopsys EDA products and AWS HPC compute resources enabled Astera Labs' compute footprint the ability to scale by more than a factor of ten, something nearly impossible to accomplish utilizing an on-premises data center. Astera Labs was able to scale up quickly by using Synopsys Cloud's on-demand license features which addressed resource limitations by providing additional accessibility to the latest tools and compute resources without design interruption.

Astera Labs was also able to run physical design and development flows—1000s of regressions at multiple speeds in parallel—allowing more design iterations and faster refinement, resulting in high quality tapeouts. This enabled Astera Labs to achieve up to 40%-time savings from RTL to tapeout by efficient use of compute, storage, EDA, and cloud instances.



Future Development

Astera Labs leveraged its existing cloud compute environment to address critical needs and successfully delivered multiple SoCs utilizing Synopsys' cloud-based EDA tools in its design flow. Synopsys Cloud's scale and elasticity help enable Astera Labs to achieve record development times, higher quality tapeouts, and accelerate time-to-market.