Accelerating EDA Time-To-Results with Synopsys Cloud

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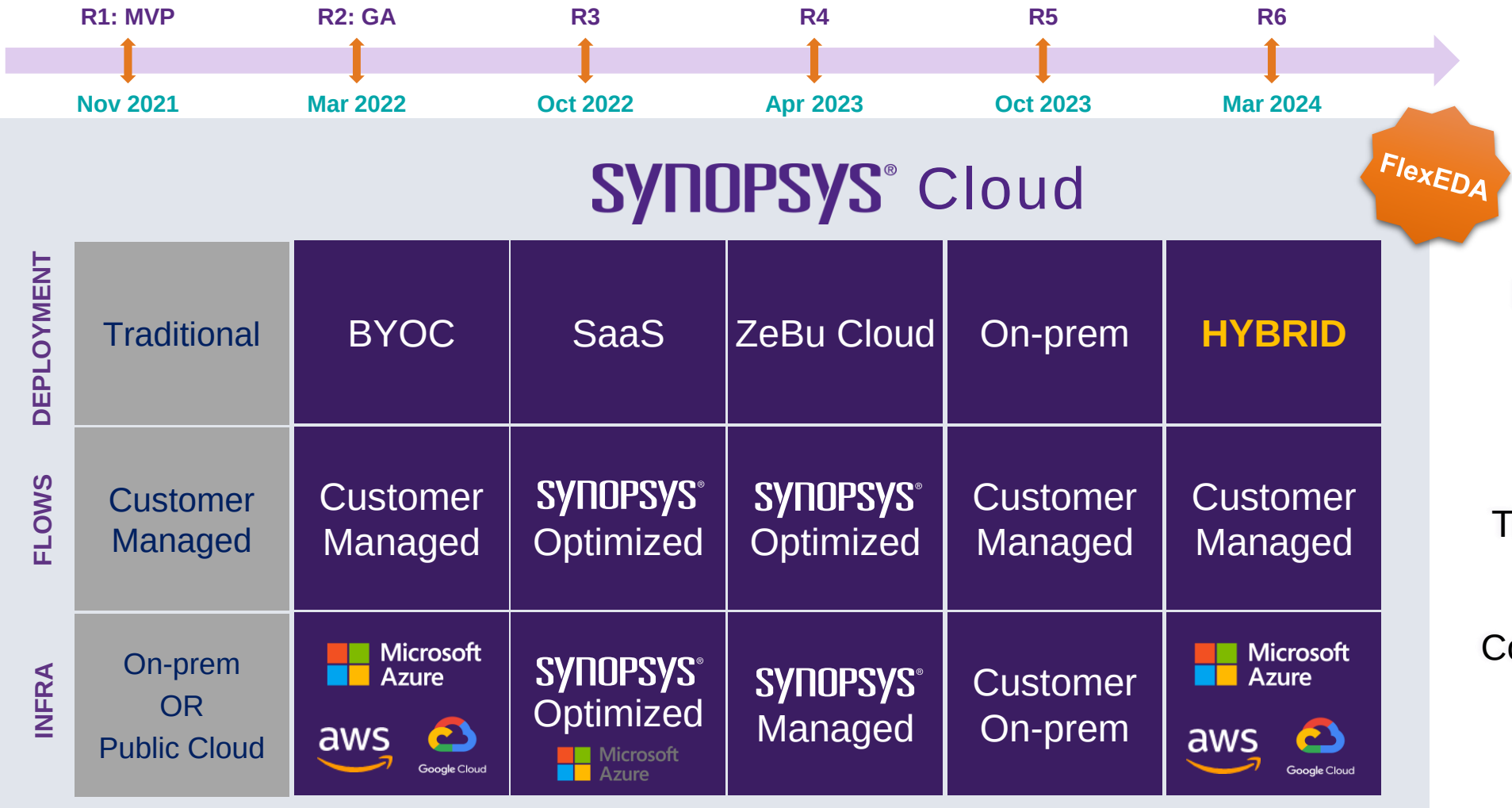
Synopsys

Synopsys Cloud Platform Overview



FlexEDA with Pay-Per-Use

40% Faster Time-to-Results

Complete License Management Automation

Synopsys Cloud Enables TTR Acceleration

Faster Job Run Times, Higher CAD and Engineer Productivity for Same Cost

FlexEDA PPU License Model

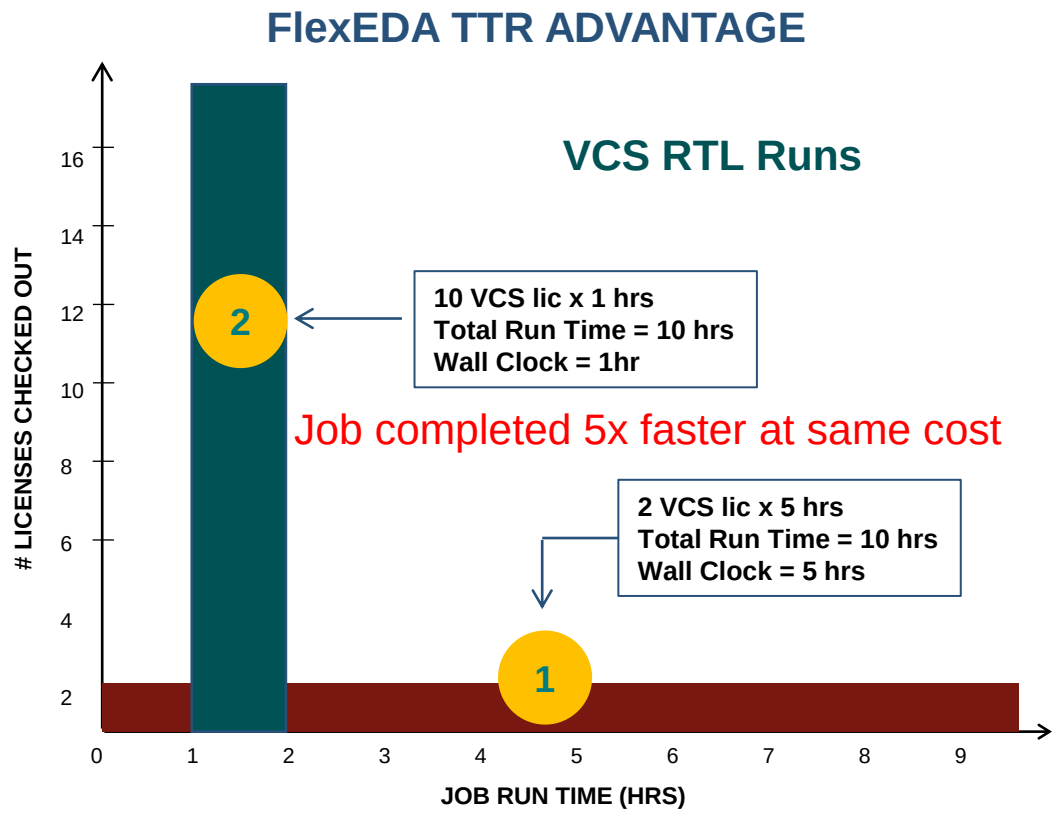
- Per minute EDA tool pricing
- Access unlimited licenses on-demand

License Management Automation

- Immediate license activation on portal
- Automated license server scalability

Hybrid Solution

- Seamless bursting of jobs from on-prem
- Real-time incremental data sync



FlexEDA Business Model

Accelerate EDA TTR by 40%

New model to manage EDA project lifecycle

Use any available tool, any quantity, any time

One Synopsys Cloud Contract

Complete License Management Automation

Pay-per-Use in real time OR plan ahead

FlexEDA Pricing Models

Pay-Per-Use

Metered per minute pricing

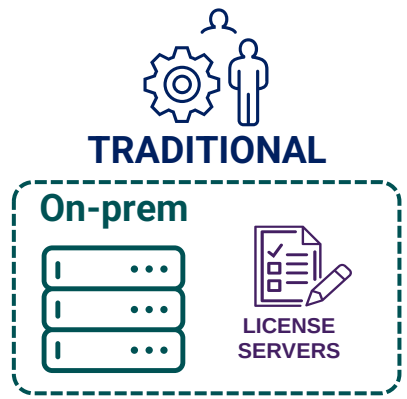
Unlimited licenses

Cloud Subscription License

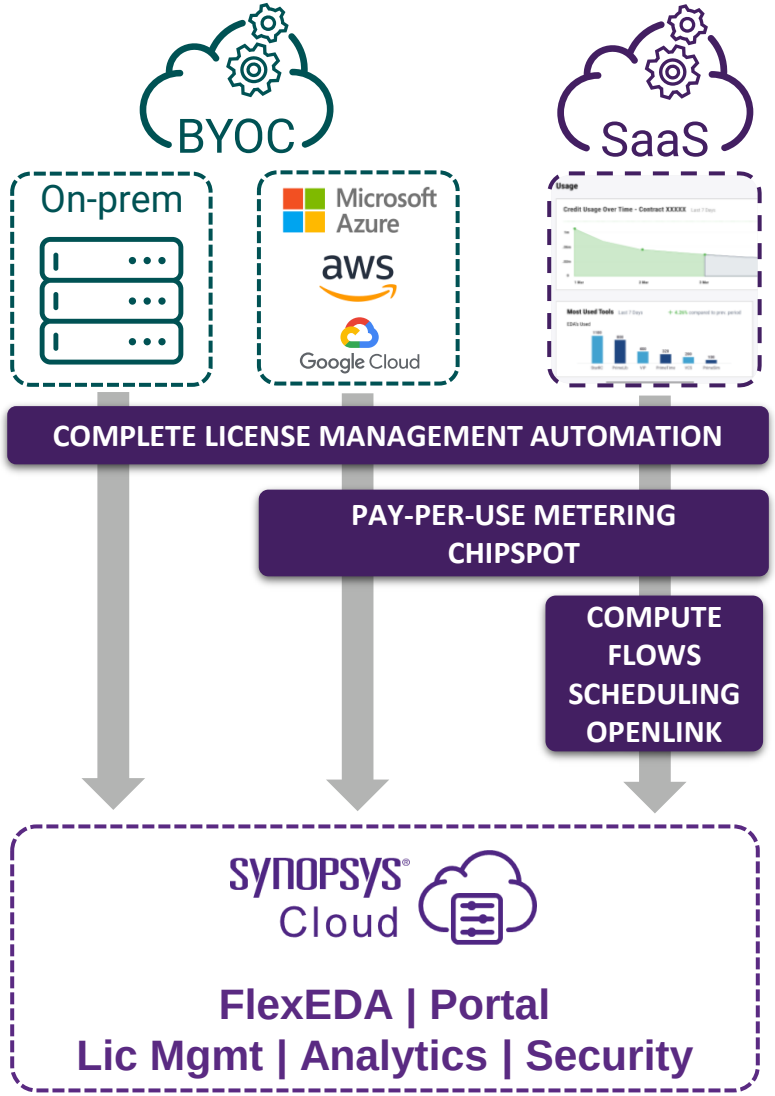
Fixed term and quantity

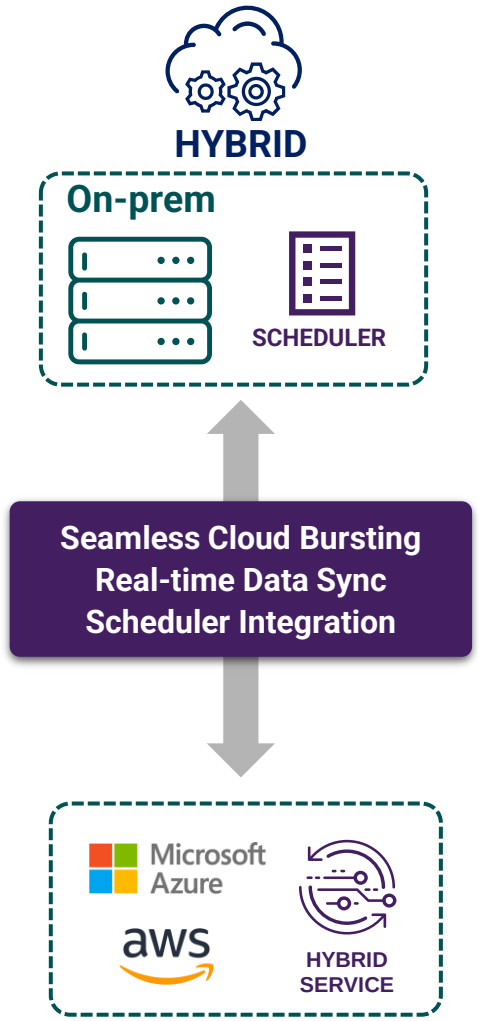
Instant purchase & activation on portal

Deployment Options



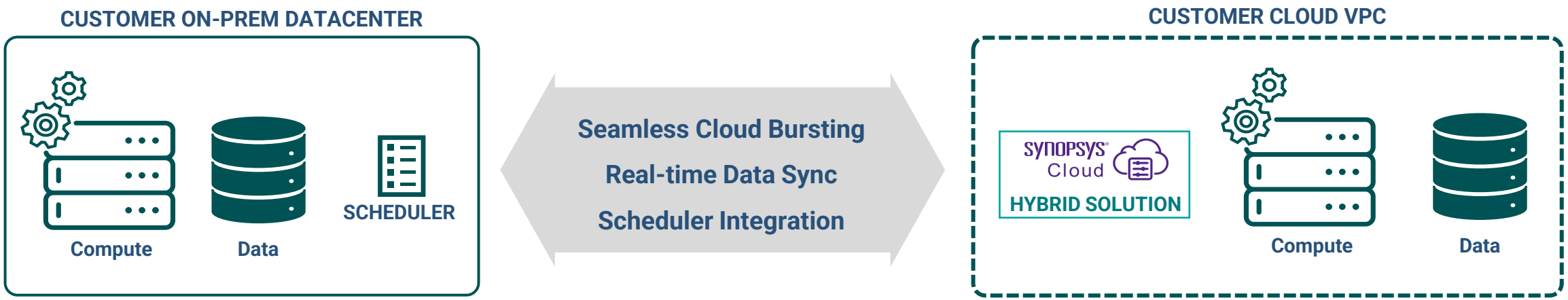
- Fixed-term licenses
- License management overhead
- License server scalability
- CAD productivity





Synopsys Cloud Hybrid Solution

AVAILABLE FOR EARLY CUSTOMER ACCESS WITH A SYNOPSYS CLOUD CONTRACT

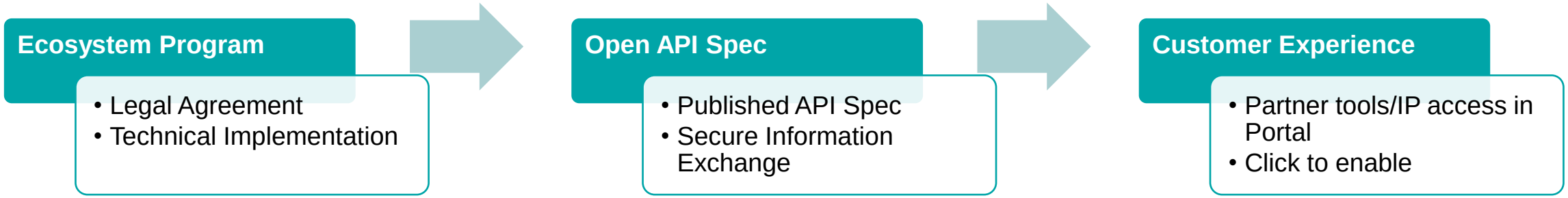


- Seamless job scheduling and **bursting** from on-prem
- Save **months** of IT implementation time
- Accelerate data transfer to **real-time**
- Improve engineer productivity by up to **50%**
- Run **multi-vendor** flows!

Synopsys Cloud OpenLink Program

Multi-vendor Interoperability on Cloud

- Enables mutual customers to access IP, foundry collateral, and EDA tools in their Synopsys Cloud SaaS environment
- System-to-system API available to enable ecosystem members to interoperate securely with Synopsys Cloud
- Note: Customers license products directly from the member companies

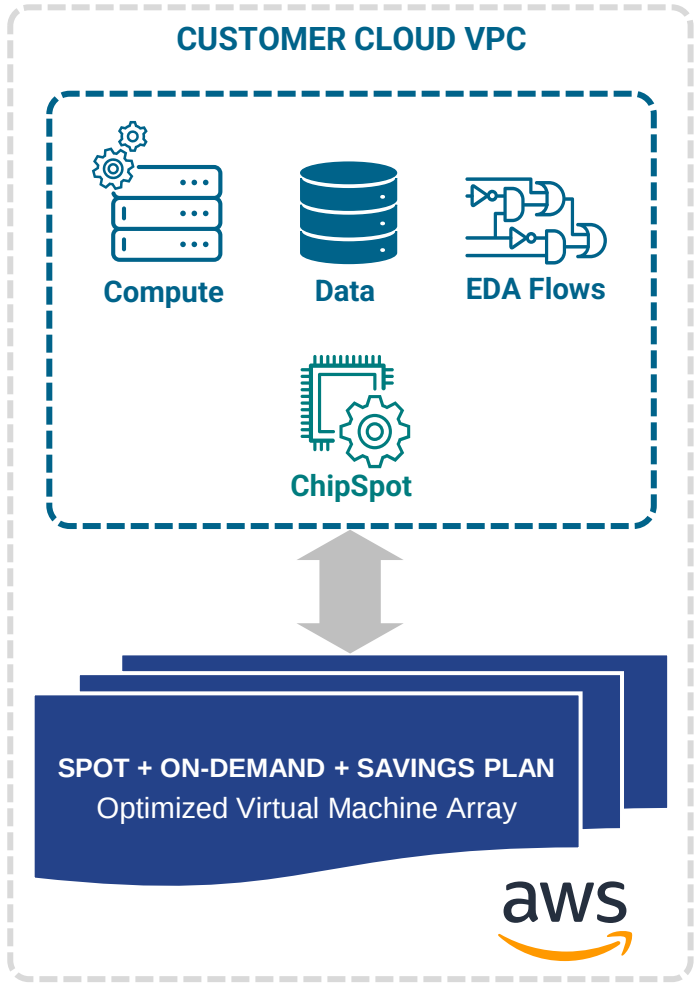


Program web page: https://www.synopsys.com/cloud/openlink.html

Open API Specification: https://www.synopsys.com/cloud/openlink/api.html

Synopsys Cloud ChipSpot

Optimized for High Memory EDA Workloads on AWS EC2 Spot Instances



- Reduce compute costs up to **75%**
- **99.5% reliability o**n SPOT instances
- **AI driven** model for spot prediction
- **Optimized for Synopsys** tools
- Run **multi-vendor** flows
- Powered by **Exostellar** technology

DSO.ai Fusion Compiler Bundle

AVAILABLE NOW!

SYNOPSYS®

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Addressing FC license and compute capacity with new bundle package

- DSO.ai bundle includes access to up to 30 FC Apex seats
  - Captive FC Apex access available through DSO, no standalone access
  - On Prem and Cloud support
  - GA in Q4FY23

Feature \ Product Tier	DSO.ai	FC Apex	Bundle
AI-Driven Optimization	•		•
RTL-2-GDSII digital implementation		•	30X Captive
Advanced node support 7nm, 5nm, <3nm		•	30X Captive

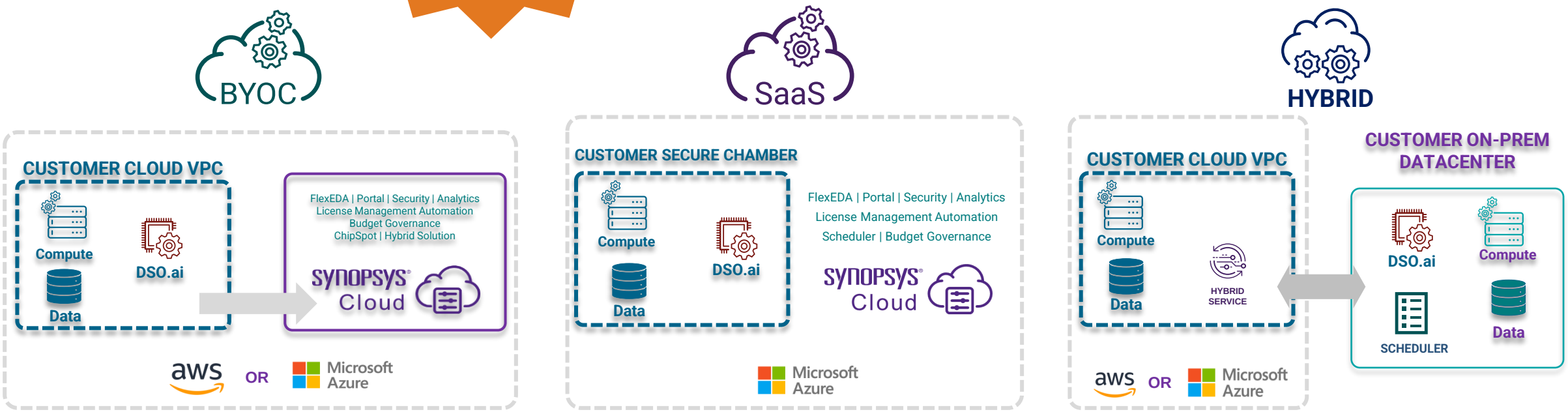
- Run on AWS/Azure with full control, Hybrid Solution makes it seamless to burst from prem to Cloud
- Run on SaaS with full browser-based access to DSO.ai + Compute

DSO.ai Bundle FREE Eval via Synopsys Cloud

Funded for First 5 DSO.ai Bundle Opportunities on Synopsys Cloud

Free evaluation includes:

- 30-Days of licenses + needed Compute (on SaaS)
- AE support
- Access to full-featured Synopsys Cloud environment



Synopsys Cloud Adoption

Synopsys EDA Tools

Pay-Per-Use Per Minute

VCS®, VIP, PrimeLib, VC Formal™, PrimeTime®, StarRC™, IC Validator™, PrimeSim™, PrimeSim Reliability, VCS PrimeSim AMS

Cloud Subscription License

Entire Synopsys EDA Portfolio

Foundries Enabled

GlobalFoundries™
intel foundry
SAMSUNG
tsmc
Tower Semiconductor
UMC
xfab

Customer Adoption

Achronix Data Acceleration
AsteraLabs.
cisco
EFFECT PHOTONICS
HCLTech
Imparé
TetraMem
iontra
MENTIUM TECHNOLOGIES

- AI Accelerators
- Automotive SoC
- 5G, Remote PHY
- FPGA IP
- Data Center
- Aerospace

Project Schedule Reduced From 3 Months to 4 Weeks With Synopsys Cloud

APPLICATIONS

- Datacenter, networking chip

CHALLENGES

- Time Critical: Three-month deadline to complete library characterization

SOLUTION: SYNOPSYS PRIMELIB ON SYNOPSYS CLOUD

- Accelerated Time-To-Market: 5X more compute (4000 CPUs) with unlimited licenses
- Reduced OPEX: Pay-per-use by the minute with FlexEDA on-demand
- One single contract for compute & EDA tools enabled business closure in one week

> *Synopsys Cloud delivered enormous compute & EDA tool scalability to accelerate library characterization using Synopsys PrimeLib.*
>
> - Jon Stahl, Sr Director, ASIC

HIGHLIGHTS

- Easy to use browser-based UI helped jumpstart characterization flow using Synopsys PrimeLib
- Scaled to 1000 CPUs within a week, with 1200 CPUs at peak utilization
- Unlimited access to PrimeLib licenses

5x Faster Physical Verification on Synopsys Cloud

Achronix Data Acceleration

SYNOPSYS®

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APPLICATIONS

- eFPGA IP

CHALLENGES

- Time-To-Result (TTR): **80 hours** to finish Full Chip backend verification
- License and compute constraints

WHY SYNOPSYS CLOUD?

- True pay-per-use model removed licensing constraints
- Physical verification flow using Synopsys IC Validator helped to reduce TTR by 5X
- Full chip IC Validator run completed in **16 hours**
- Production environment up and running within a day

> *We ran physical verification for our entire SoC and got results 5x faster. Combined with the reduction in license server management overhead, we are able to focus on improving the quality of the design and meeting project schedules.*
>
> - Chris Pelosi, VP, Hardware Engineering

Achronix's Speedster7t FPGA family targeted for high-performance AI/ML and networking applications leveraged Synopsys Cloud for development.

Accelerated tape-out of AI chip for Space Applications on Synopsys Cloud

APPLICATIONS

- AI, Neural Network, Ultra-low Power: Space, Robotics, Security Cameras

CHALLENGES

- Tape-out schedule at risk
- Scale compute and storage, on-demand
- Burst EDA workloads, on-demand

SOLUTION: SYNOPSYS CLOUD SaaS

- True pay-per-use for EDA with unlimited access
- All-in-one platform for EDA and Infrastructure
- Reduced OpEx: On-demand, pay-per-use access

> *Just like our AIM technology that focuses on the highest AI precision with dependability, throughput, and efficiency, Synopsys Cloud FlexEDA model provides the most dependable, efficient, and complete EDA environment to design chips faster.*
>
> - Mirko Prezioso, CEO, Mentium Technologies

HIGHLIGHTS

- Up and running in two days
- On-time delivery of first tape-out, pulled in the schedule for second tape-out
- Easy end-to-end browser-based experience
- Complete license management automation

Accelerating Development of a Novel Analog In-Memory Compute AI Accelerator SoC Using Synopsys Cloud

TetraMem

SYNOPSYS®

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APPLICATIONS

- In-memory computing, AI Accelerator SoC

CHALLENGES

- Global teams required seamless, unified mixed-signal SoC design environment for efficient collaboration
- Required CAD setup/flows and on-demand scalable and elastic IT resources
- Complex AI design required integration and extensive verification of analog in-memory computing and the digital RISC-V processor, with critical time-to-market targets

SOLUTION: SYNOPSYS CLOUD SaaS

- Jumpstart with pre-configured end-to-end design flow
- Intuitive and user-friendly browser-based platform for chip design
- On-demand pay-per-use access to unlimited EDA resource
- Instant scalable and cutting-edge compute and storage

> *We were able to achieve a very fast infrastructure setup on the Synopsys Cloud EDA environment within days. The vast selection of EDA tools and IP available on the cloud enabled us to start the design, verification, and backend flow very quickly. The flexibility of using as many licenses as we needed enabled us to obtain fast turnarounds on simulation, verification, and backend flow, which significantly reduced the engineering hours spent on those compute-intensive tasks. The ease of global access provided a single environment for our global R&D team with seamless access.*
>
> *-Wenbo Yin, VP of IC Design, TetraMem Inc.*

HIGHLIGHTS

- Up and running in days instead of weeks
- Complete and intuitive design flow
- Improved collaboration and productivity

Astera Labs Adopts Synopsys Cloud for Chip Design

Reduced Time-To-Market by 30% with Higher Quality

APPLICATIONS

- Connectivity solutions for datacenter

CHALLENGES

- Aggressive tape-out schedule

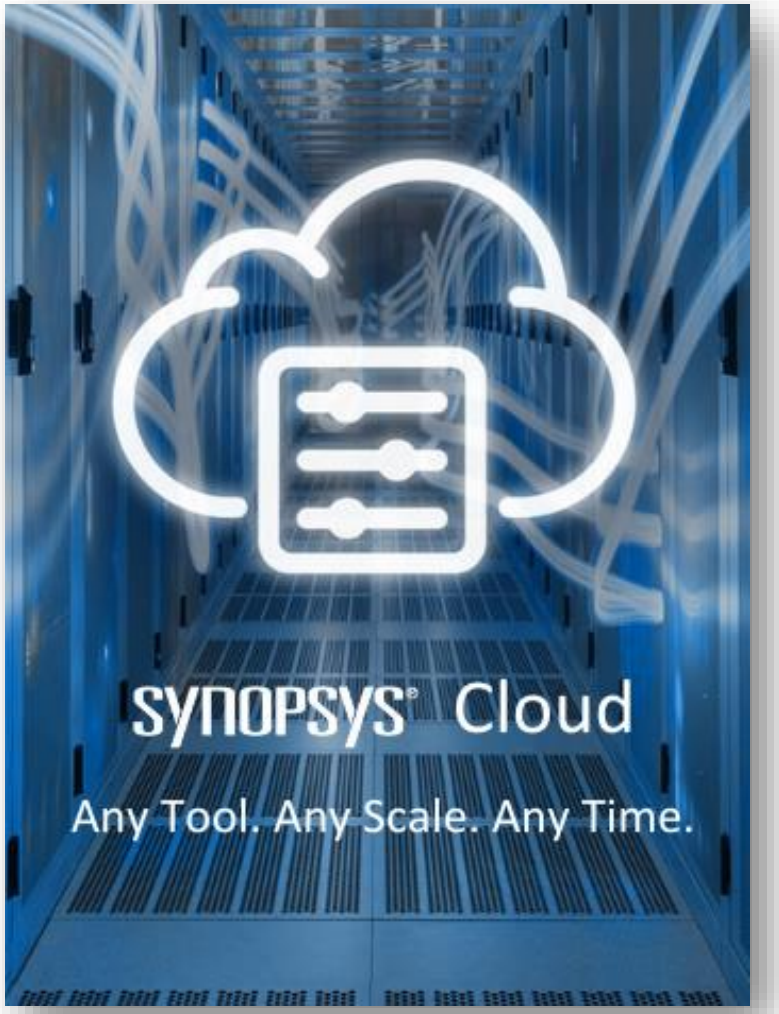
WHY SYNOPSYS CLOUD?

- FlexEDA helped dynamically scale and utilize cloud to fullest
- On-Demand licenses addressed resource limitations
- 30% time savings from RTL to tape-out through efficient use of compute, storage, EDA, and cloud instances

> *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

> *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

> *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



TRY SYNOPSYS CLOUD FREE FOR 30 DAYS

synopsys.com/cloud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Our Technology, Your Innovation™