Ansys Product Vision & Roadmap

Advancing Design in an AI World

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Director Product Management

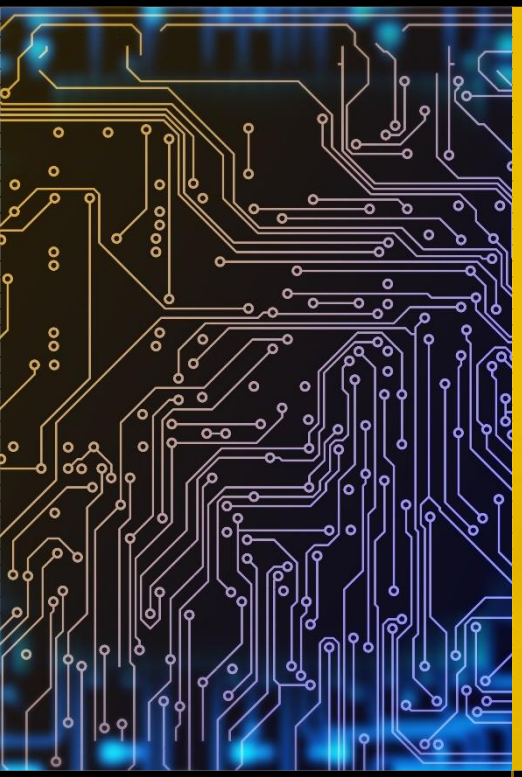
Powering Innovation That Drives Human Advancement

2,000+ global experts, **ready to support your teams** to help solve your toughest challenges

Expanding portfolio of **Industry-leading products** helping to realize your greatest innovations

Innovating **methods of delivery and better experiences** to continue to deliver for your transforming needs

Ansys Northeast



100+

Experts dedicated to northeast region

1,750+

Live training hours consumed by customers

7,750+

Hours of ALH consumed by customers

5,150+

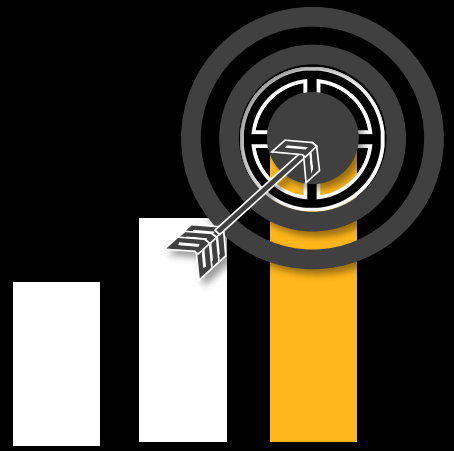
support hours logged in 2023

93.5%

Customer satisfaction score *2023*

Strategically investing to support your digital engineering needs

Continuing to see investment and growth potential



$1B+ in R&D spend

$5B+ in acquisitions

25+ acquisitions

since 2011

3DSIM · ROCKY · Helic · OPTIS · GRANTA MATERIAL INTELLIGENCE

SPACECLAIM CORPORATION · Zemax · PHOENIX INTEGRATION · Motor Design Limited

DfR Solutions RELIABILITY DESIGNED & DELIVERED · LSTC Livermore Software Technology Corp. · dynardo optiSLang · lumerical

onscale · C&R TECHNOLOGIES · DYNA MORE · Dynardo

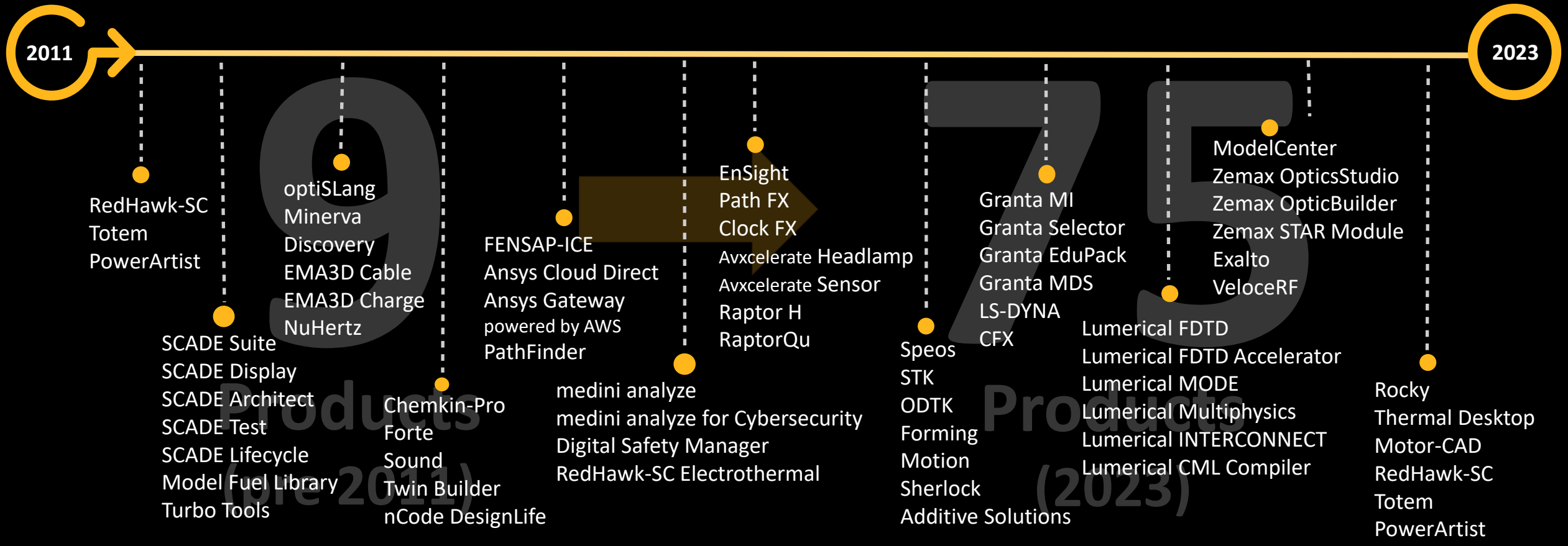
diakopto™

Ansys

Added many capabilities for your teams to leverage for innovation

A view of the Ansys product portfolio growth from 2011

Mechanical	Autodyn	HFSS	Maxwell	Fluent	CFX	SIwave	Icepak	Q3D Extractor



Reimagining the Ansys Experience

Advancing the Ansys user experience will **accelerate** innovation, **improve** productivity, and **increase** agility.

USER INTERFACE

Modern, consistent & componentized

COLLABORATION

Native integration

Data Management

AI/ML driven insights

PLATFORM

CLOUD

XaaS: SaaS, IaaS, & PaaS

ECOSYSTEM

Open APIs using Python

A vision for the future of simulation

Pervasive Insights

Anyone can make better decisions faster based on insights delivered through industry specific apps that leverage multiphysics + other computational simulations, AI/ML, and the power of the cloud.

Pervasive Simulation

Any developer or engineer can improve any product design by leveraging integrated multiphysics workflows automated by AI/ML and scaled through cloud based HPC.

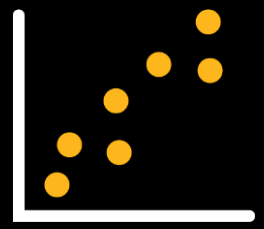
Simulation Leadership

Any expert analyst can validate any product design based on insights from multiple physics simulation using separate tools and ad-hoc on-premises solutions.

Introducing Ansys' 5 pillars of innovation

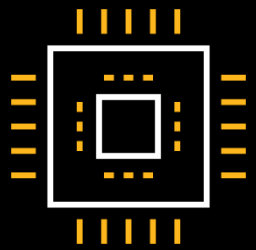
Driving your greatest innovations and solving your toughest challenges

NUMERICS



- Solver methods
- Geometry and meshing
- Shape and topology optimization
- Advanced analysis
- Multi-physics
- Multi-scale

HIGH-PERFORMANCE COMPUTING



- Shared-memory
- Message-passing
- Fine-grained GPUs
- New architectures: FPGAs & AI Hardware
- Quantum computing

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

- Solver acceleration
- Solver settings
- Top-down methods
- Bottom-up methods
- Reduced order models
- Large language models

CLOUD AND EXPERIENCE

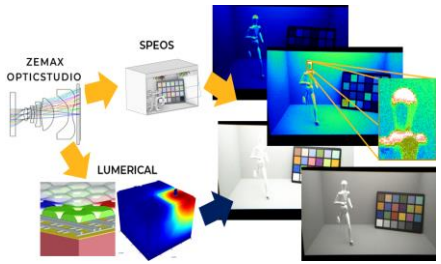
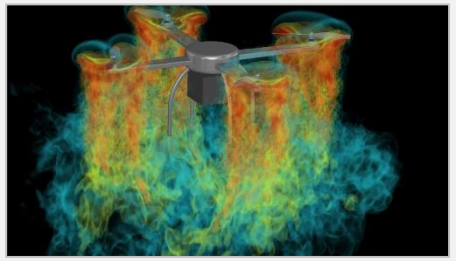
- Cloud Enabled
- Cloud Native
- Platform, Collaboration
- Open APIs and developer ecosystem
- Common user experience

DIGITAL ENGINEERING

- MBSE
- Requirements & architecture connections
- Safety, security & software
- Digital twins
- Simulation process & data management

Ansys' 5 pillars of innovation advancements

Developing new capabilities with every release

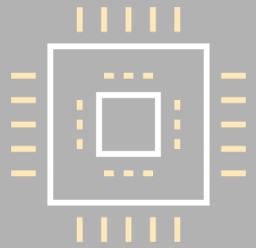
NUMERICS	HIGH-PERFORMANCE COMPUTING	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	CLOUD AND EXPERIENCE	DIGITAL ENGINEERING
2023 R2 Updates				
				
Nano-scale to macro-scale optics enhancement	5 products now leveraging GPU for solver acceleration	More than a half-dozen products leveraging AI/ML	Continuing to deliver on PyAnsys acceleration	Digital safety manager & safety platform launch

Ansys AI powering advanced innovation

AI insights

NUMERICS

HIGH-PERFORMANCE COMPUTING



ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

CLOUD AND EXPERIENCE

DIGITAL ENGINEERING

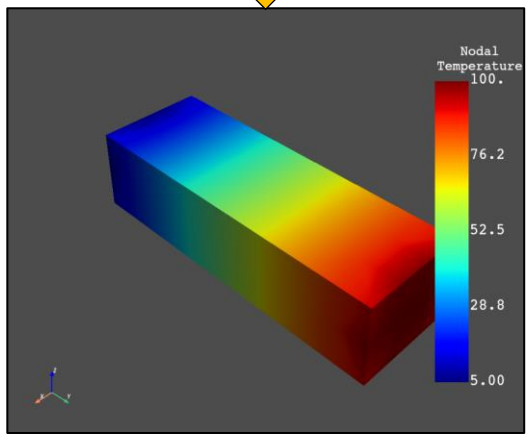
Development	Beta Testing	Launch
Complete	**In Progress**	**2024**

Ansys Notebook – PyAnsys large language model code creation

Simple case

Prompt

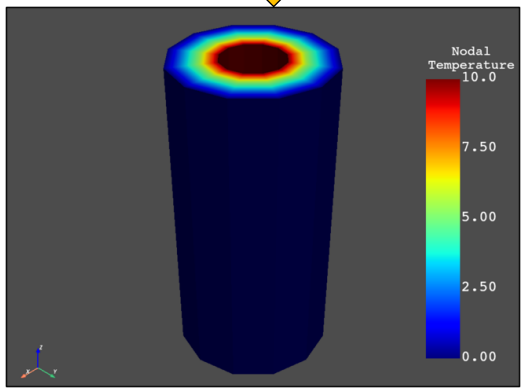
Generate a thermal 3d plate example using PyMAPDL. Show the post processing.



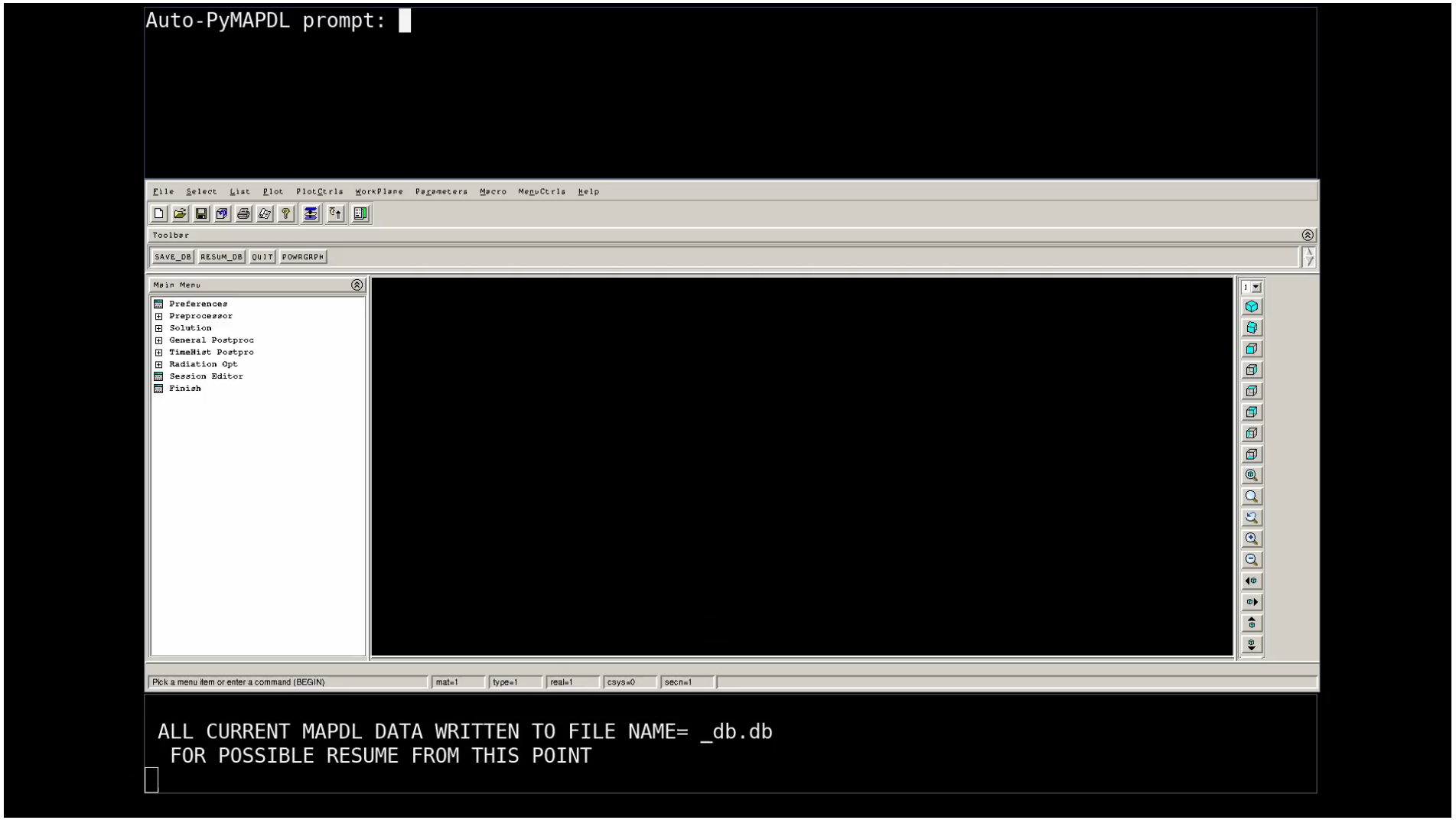
More complex case

Prompt

Generate a PyMAPDL script to create a cylindrical geometry with a radius of 0.05 m and a height of 0.2 m. The cylinder should have a hollow region with a radius of 0.02 m and a height of 0.1 m. Create a heat transfer simulation in which a constant heat flux of 1000 W/m^2 is applied to the inner surface of the cylinder, and the outer surface is assumed to be insulated. The cylinder material has a thermal conductivity of 50 W/mK and a specific heat of 500 J/kgK. The simulation should run for 1000 seconds.



Ansys Notebook – PyAnsys large language model code creation



Multi-GPUs that greatly accelerate your simulations

CFD GPU acceleration

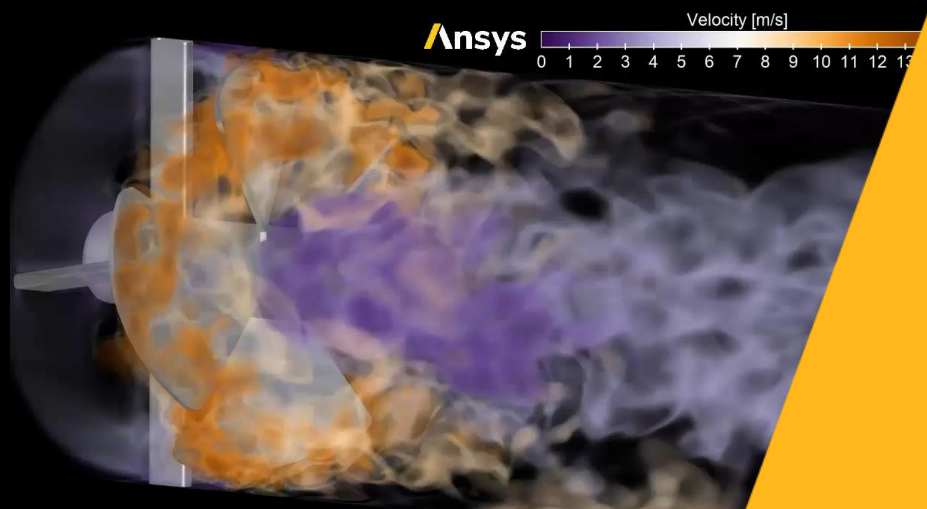
NUMERICS

HIGH-PERFORMANCE COMPUTING

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

CLOUD AND EXPERIENCE

DIGITAL ENGINEERING



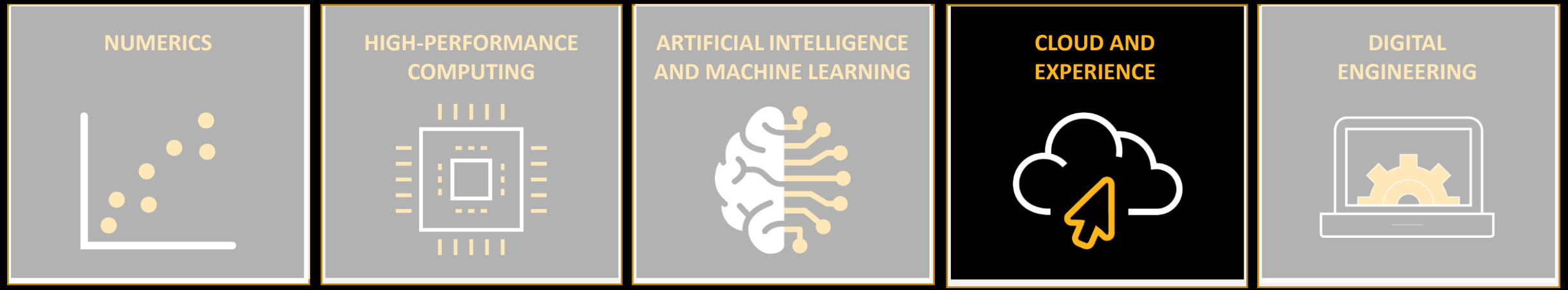
6 high-end GPUs ≈ 2,000+ CPUs

Faster solve times than CPU with reduced power consumption, and is now extended to support:

- Compressible flows
- Rotating components with sliding mesh
- EDM combustion

Run complex applications natively on GPUs **substantially reducing solve time and total power consumption**

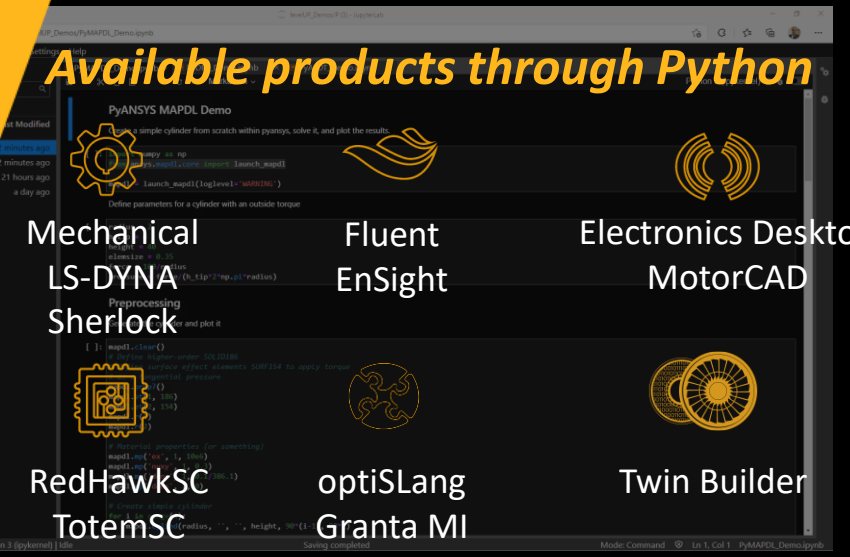
PyAnsys acceleration across the portfolio



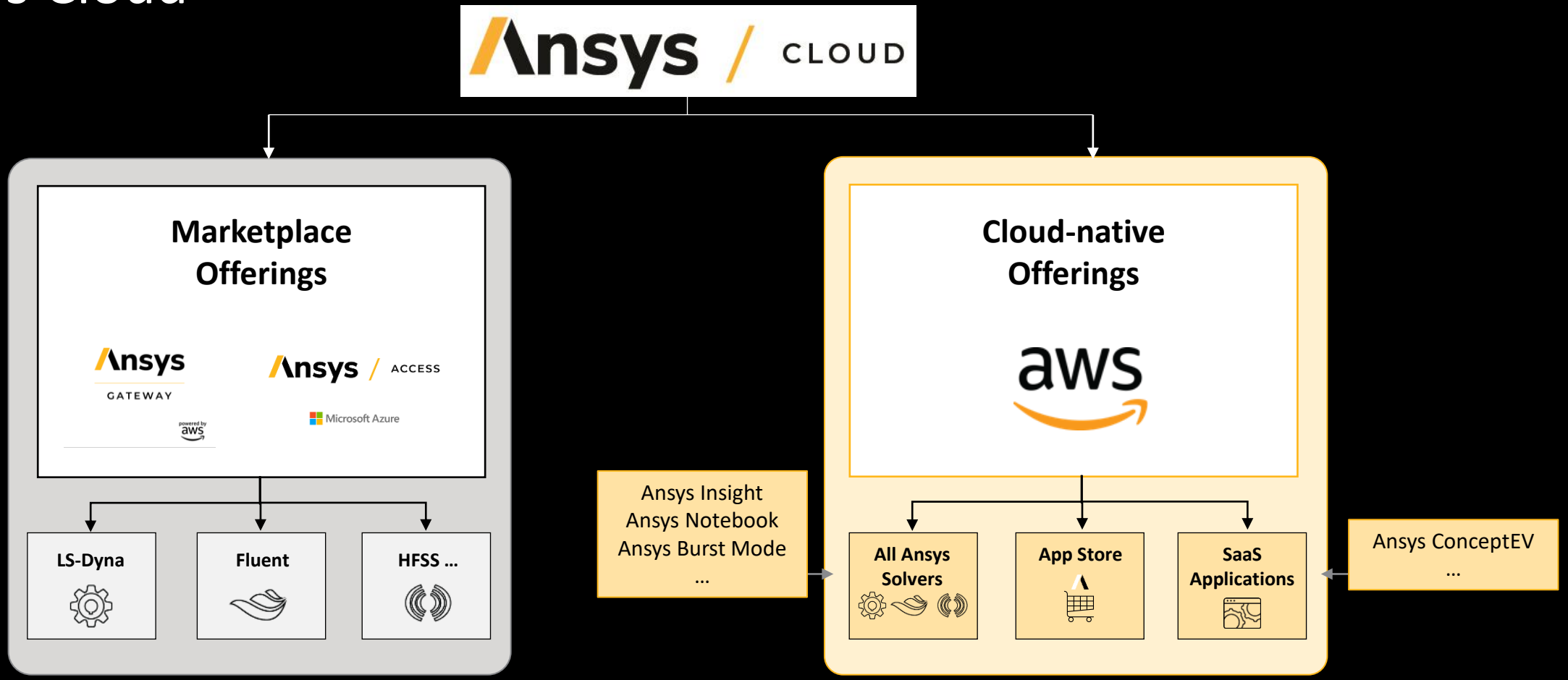
PyAnsys allows Ansys users to interface Ansys Technologies through APIs with the Python ecosystem

- Democratize powerful capabilities through scripting
- Seamlessly connect Ansys and open-source tech
- Easily integrate Ansys physics capabilities with AI/ML

Available products through Python



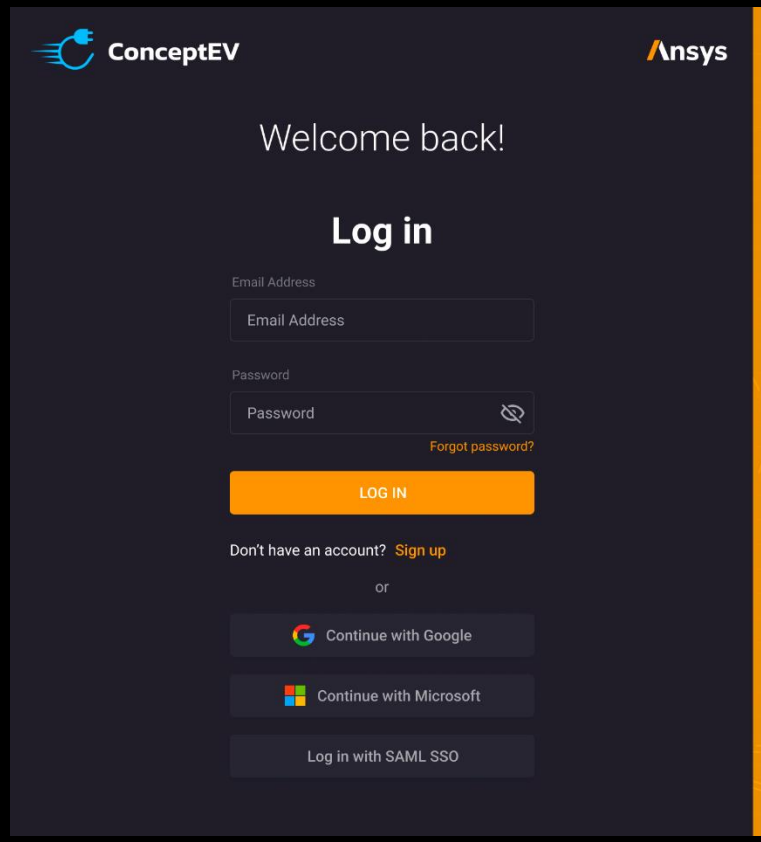
Ansys Cloud

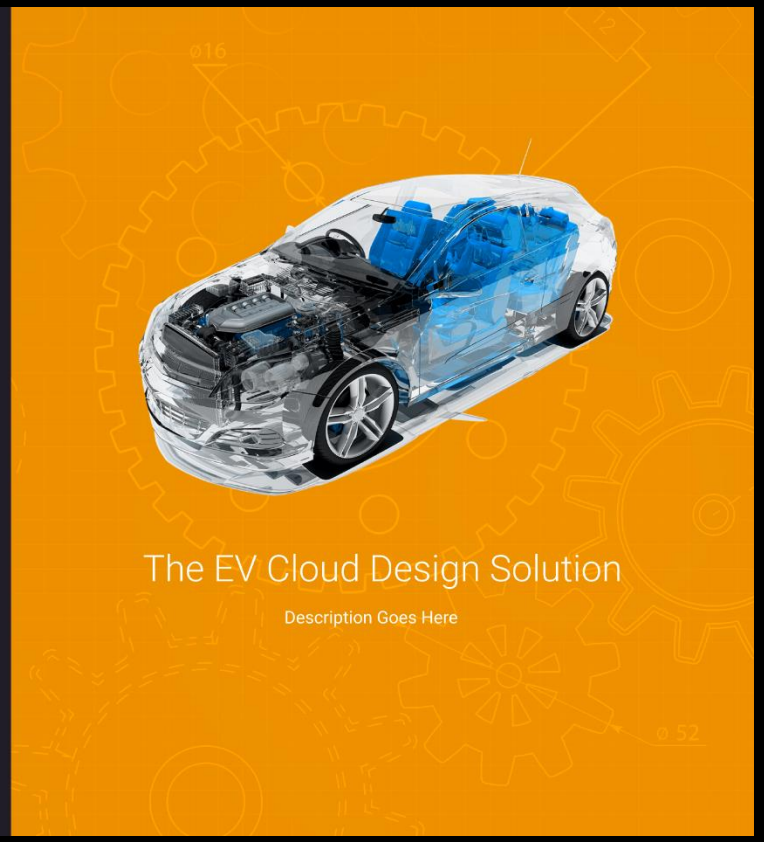


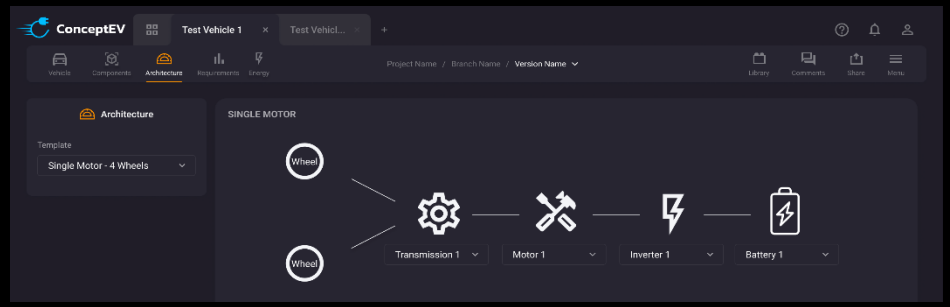
HPC intensive workloads
Bring your own licenses to your own cloud

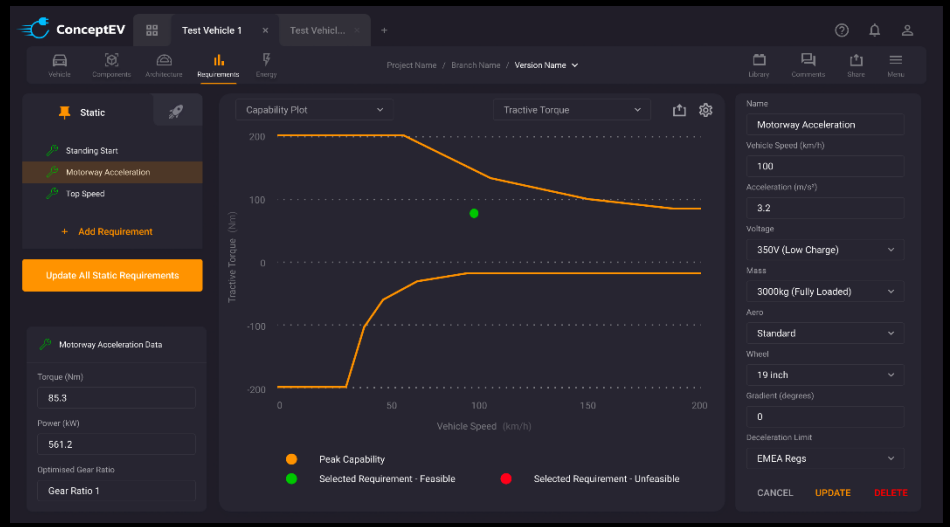
Cloud-native experiences with
Ansys and 3rd party solvers

Introducing Ansys ConceptEV





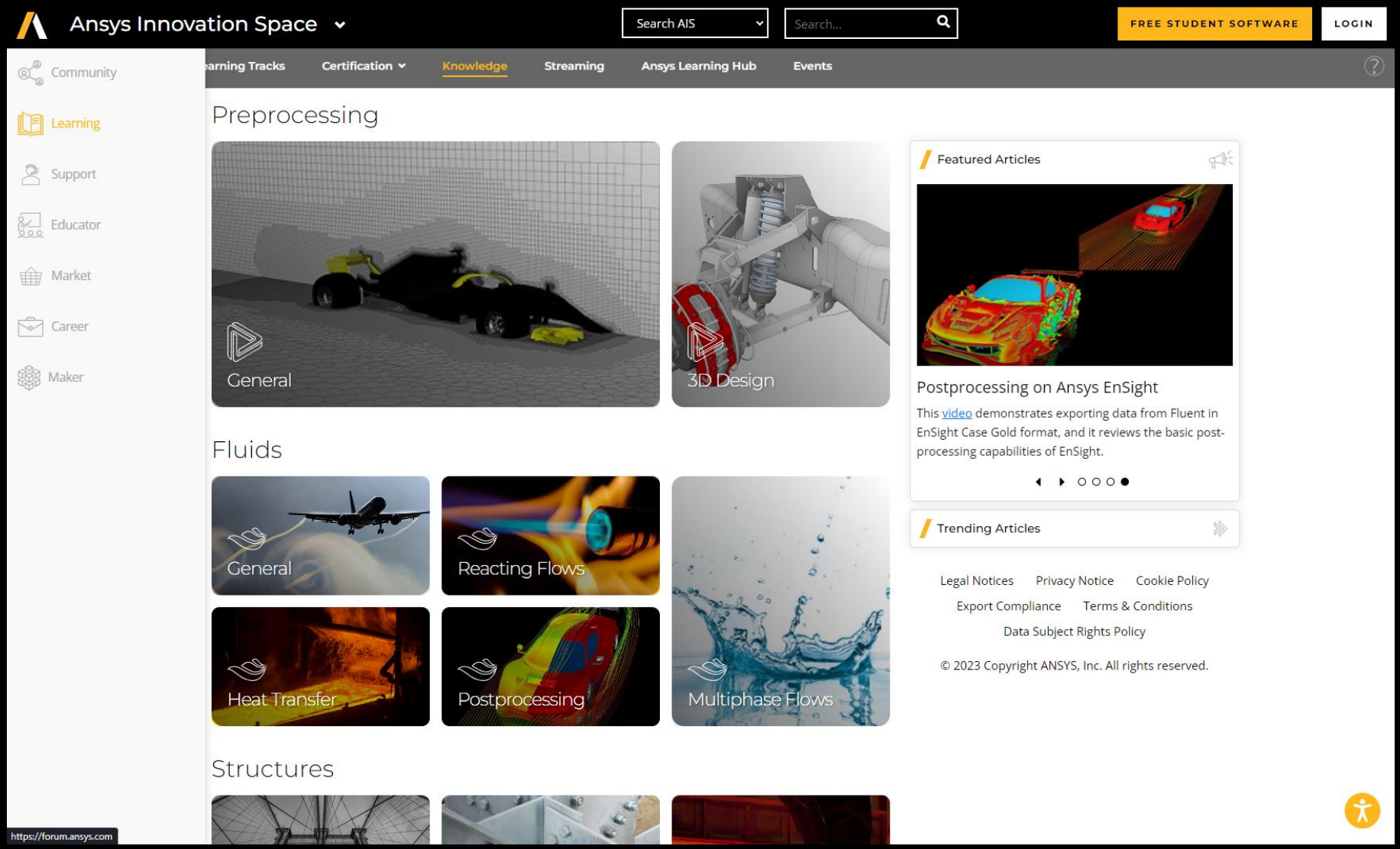




The Ansys experience

- Enhancing collaboration
- Modern UIs
- Web UIs
- …

Introducing Ansys Innovation Space



Introducing Ansys Innovation Space


Ansys

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