



Powering Innovation That Drives Human Advancement

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# New Ansys Web App Experience

*Next generation of OWA*



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*Senior R&D Manager*

# Reimagining the Ansys experience

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

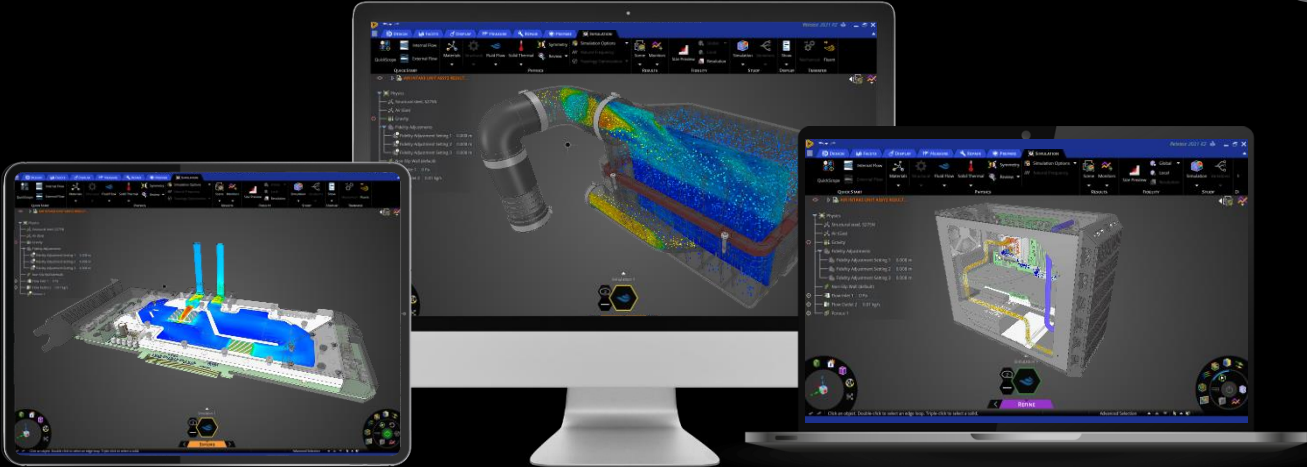
## USER INTERFACE

Modern, consistent & componentized



## COLLABORATION

Native integration



## CLOUD

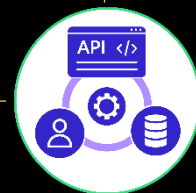
XaaS: SaaS, IaaS, & PaaS



## PLATFORM

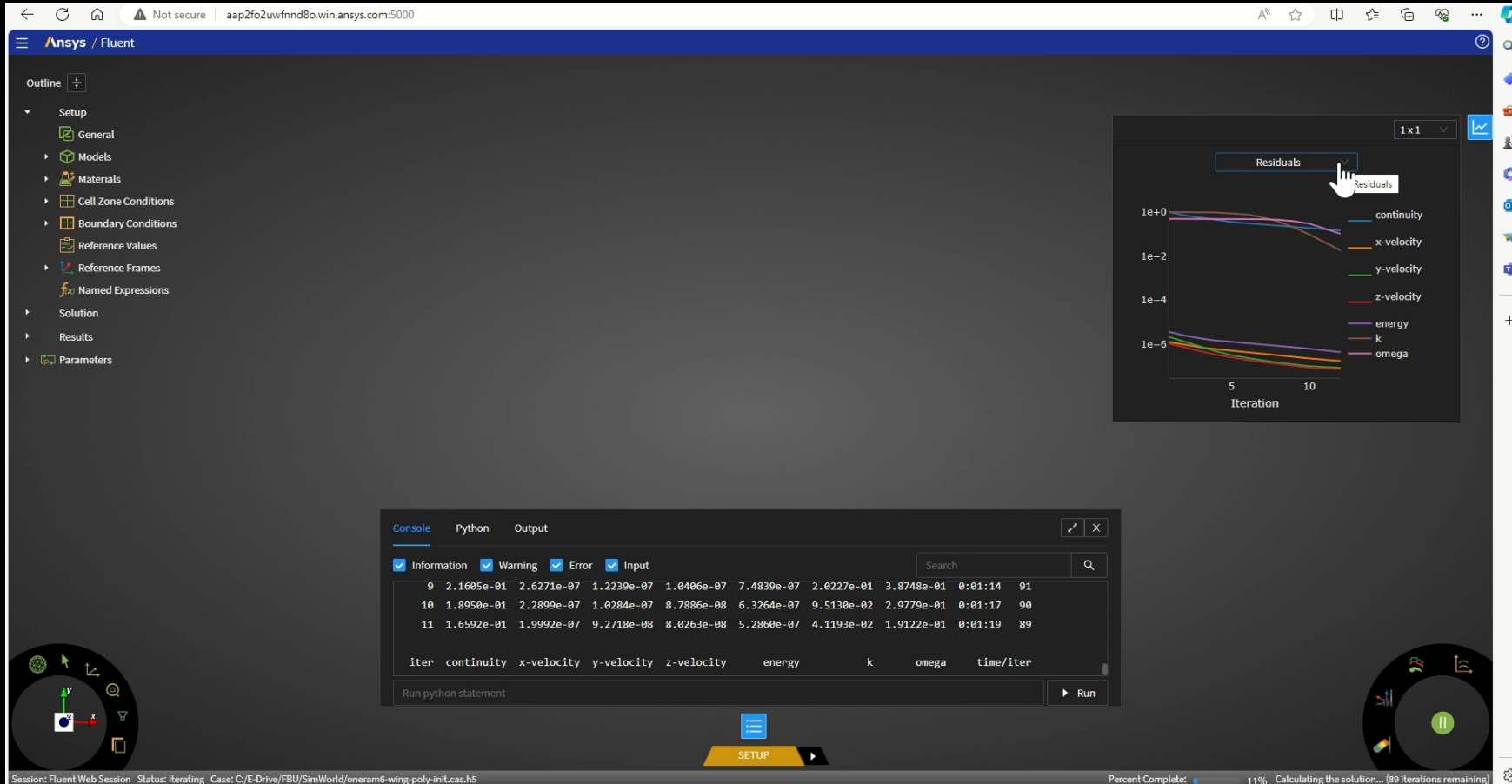
## ECOSYSTEM

Open APIs using Python



# Reimagining the Ansys experience

The user experience of Ansys products is rapidly evolving



The New Ansys Fluent UI enables using Fluent from a web browser

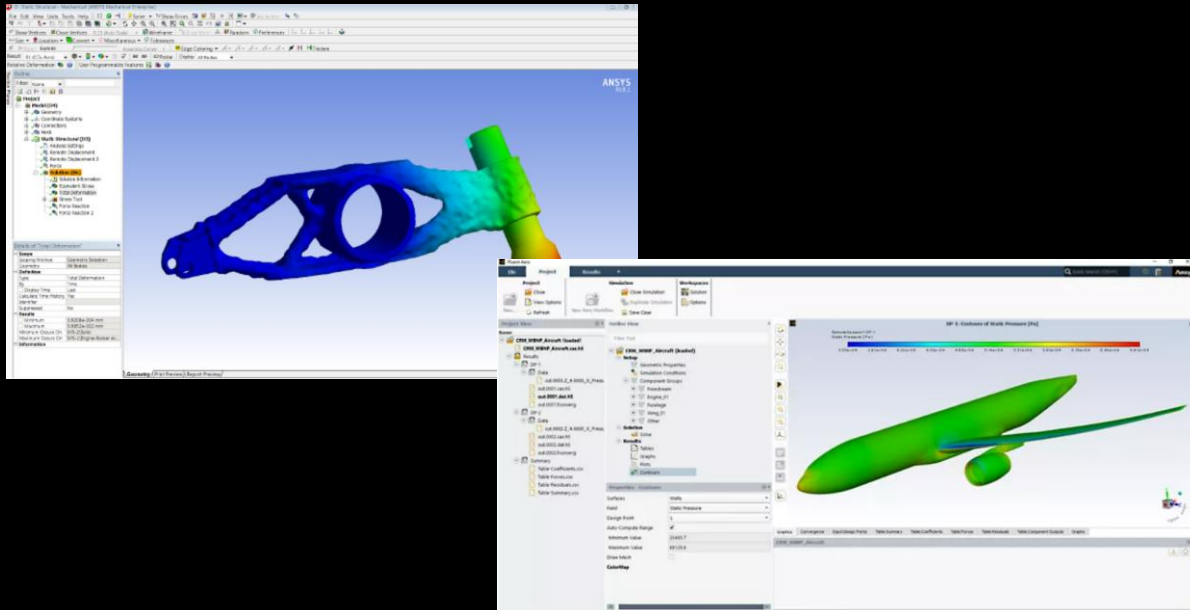
[Immersive User Experience with the Ansys Fluent Web Interface | Simulation World \(youtube.com\)](#)

# Reimagining the Ansys experience

Ansys user's needs have evolved in the previous years.



From manual steps undertaken by simulation engineers...



Limited to simulation experts



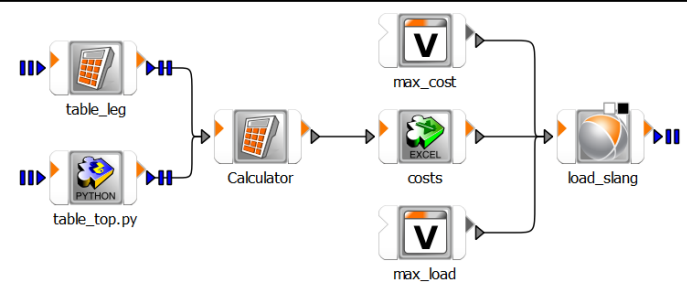
... to vertical end-to-end workflows enabling any engineer to trigger an analysis.



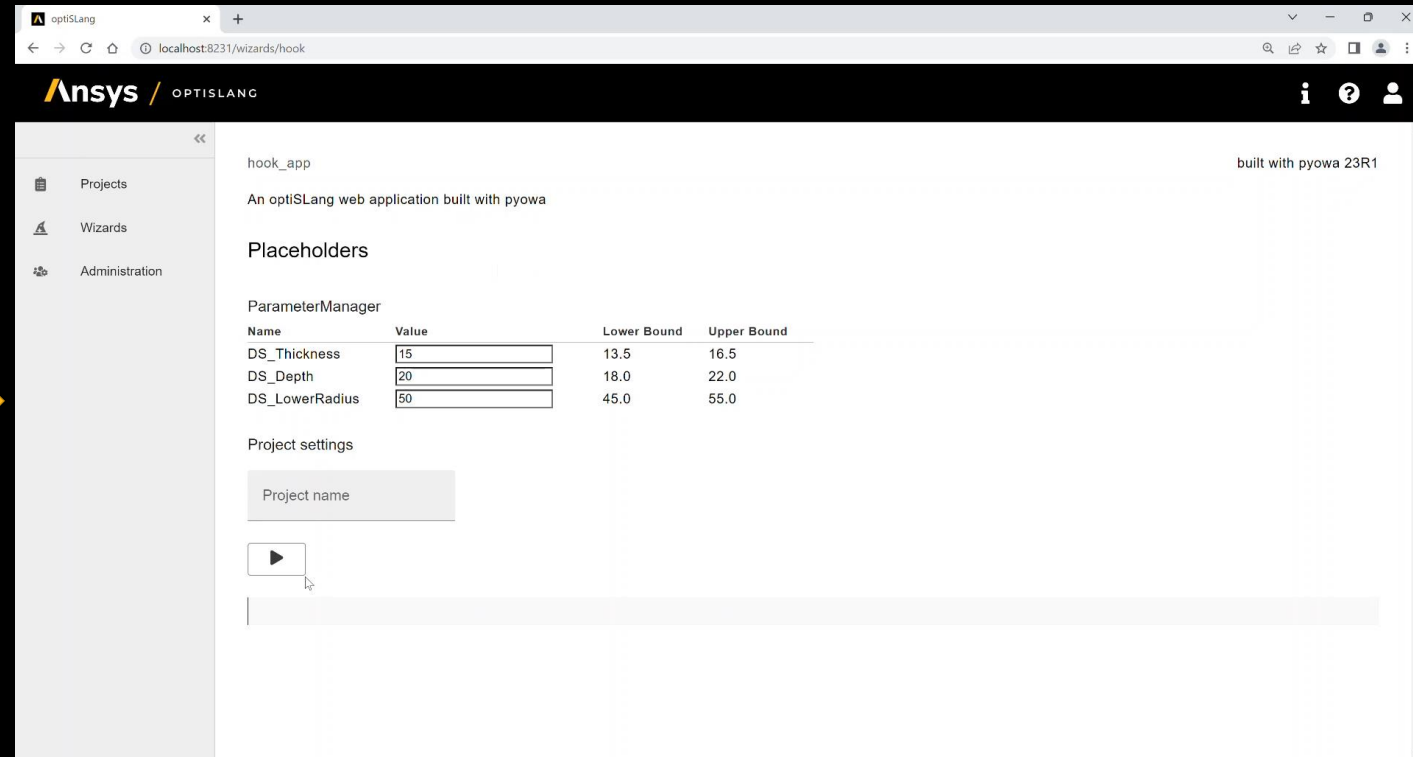
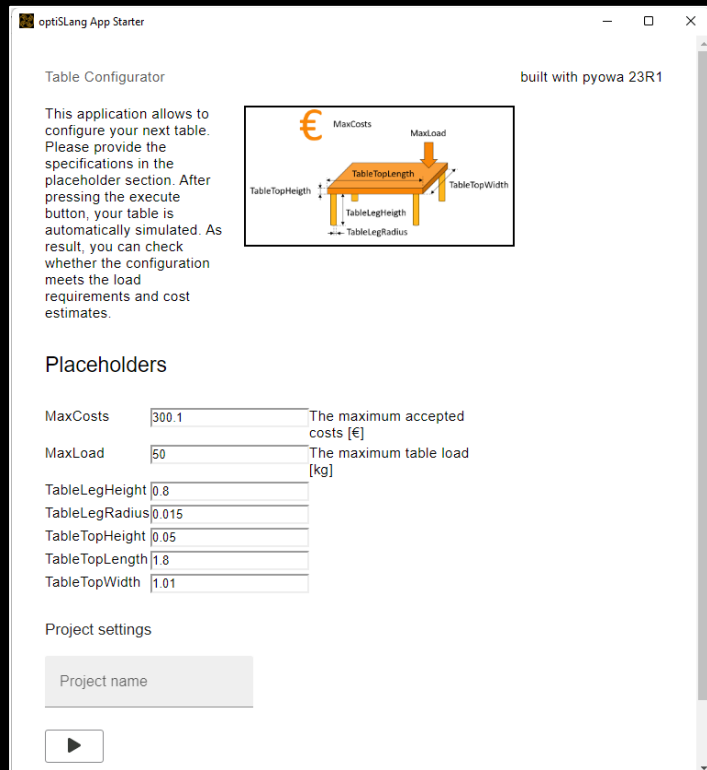
Extended to non-simulation experts or enabling cross-domain collaboration

**Solutions Web Apps address these needs**

# Reimagining the Ansys experience

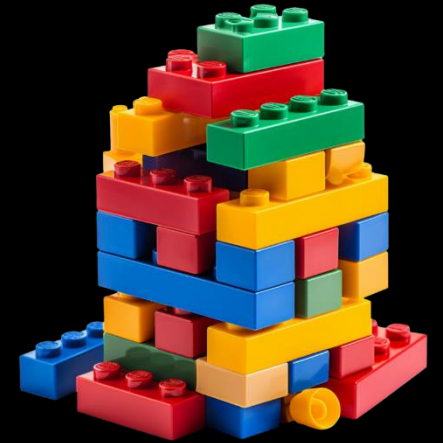
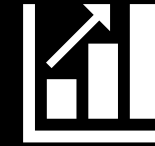


optiSlang users have leveraged the power of solution web apps for years!

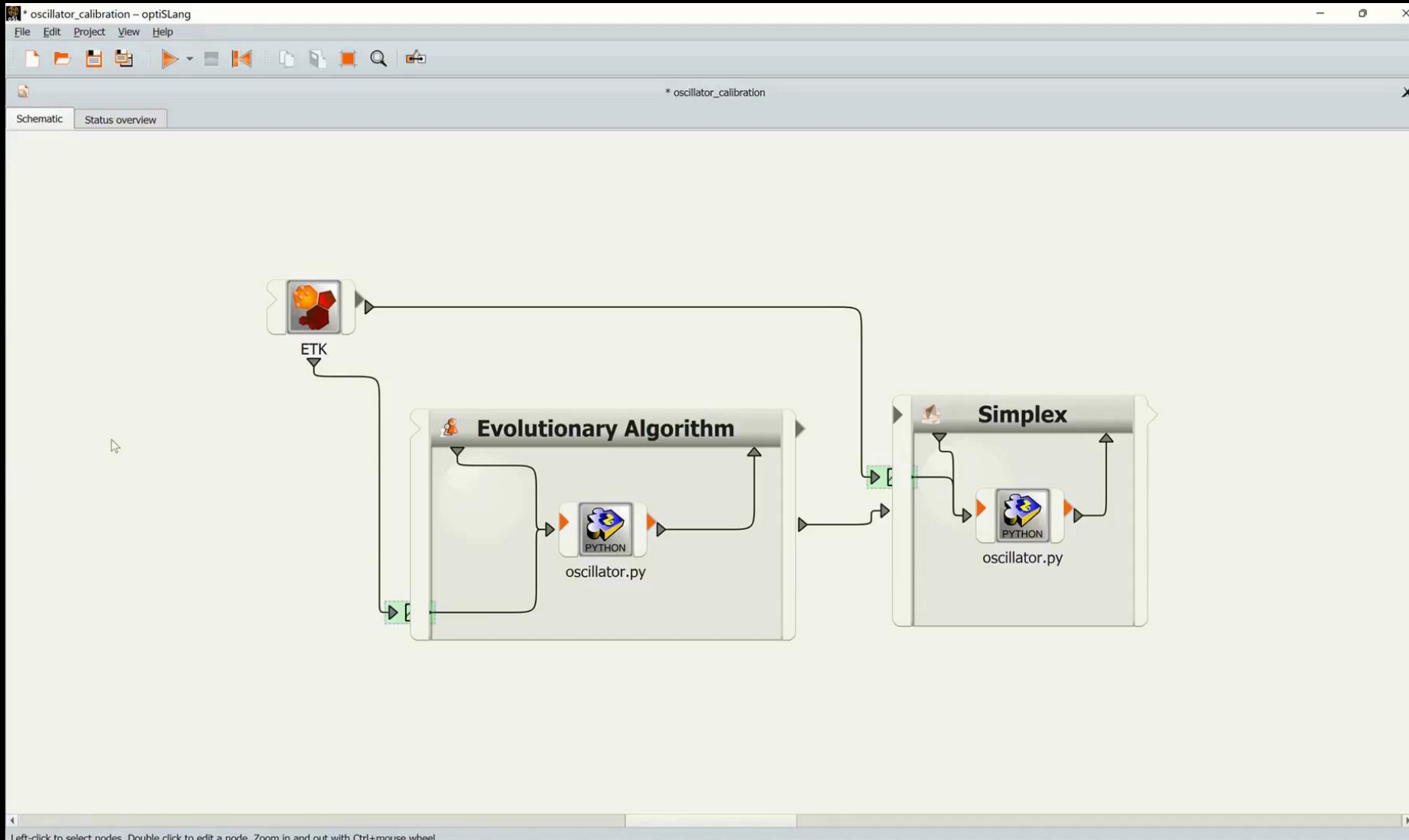


# What are the needs to build a modern web app?

- ✓ **Scalable architecture**: stateless microservices for back-end and front-end that can be **scaled up** horizontally automatically if needed if the demand increases
- ✓ **Component-based architecture**: modular, reusable components built with a LEGO-like approach, enabling flexibility, scalability, and ease of maintenance by independently developing, combining, and extending software components
- ✓ Automatic **persistence** of the data generated, including different types of database systems
- ✓ **Portability** between desktop, on-prem and cloud deployments, meaning no need to create a new app to adapt it to the deployment mode
- ✓ Easy **customization** of the front-end using open-source python packages
- ✓ **Observability** off the shelf: logs, traces and metrics are exposed by the web app
- ✓ Easy way to **debug** and **troubleshoot** the Web App



# New generation of autogenerated apps from optiSLang



## Capabilities included:

- Autogenerated web app with Pre/Post and Run capabilities
- Provided in the oSL installer
- Microservices based
- It can be deployed and ran in diverse environments, including desktop, on-premises or cloud-based platforms.
- User can modify the UI using python (Plotly Dash)

Available from oSL  
2024 R2

# Documented App Low Code Customizations (coming in 2025R1)

## Varying levels of customization

- Increasing flexibility
- Differing levels of coding skills

**No-code:**  
User simply  
adds their  
own asset file

**Low-code:**  
Documented/guided  
simple modifications

**Full-code:**  
Python code is fully  
accessible for  
modification

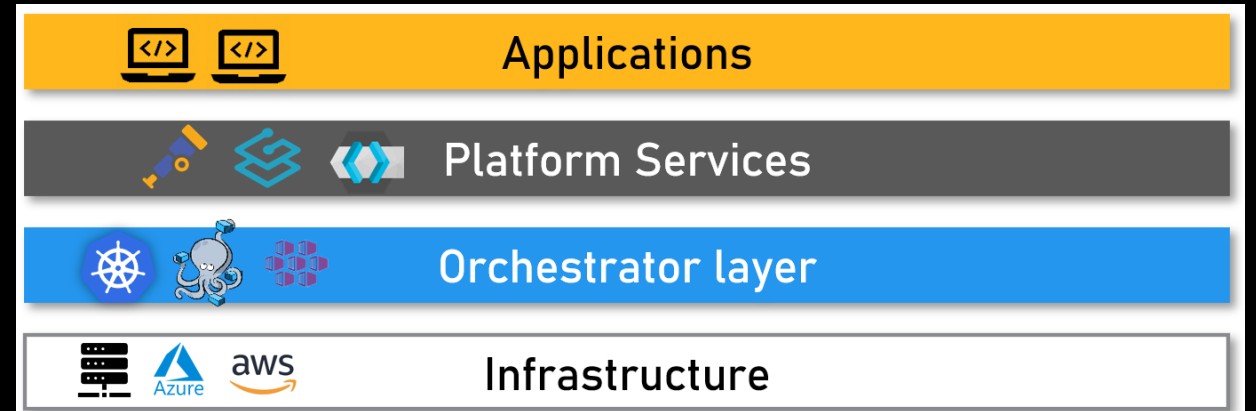


The screenshot displays the 'Tuning Fork' application interface. At the top, there is a navigation bar with 'COMPANY NAME / Solutions' and a 'Project Name' field containing '714d043e-06b8-43a0-880c-3de2baa0abf8'. Below this, a 'Problem Set...' section is visible. The main content area features a title 'Tuning Fork' and a subtitle 'An optiSLang (web) application'. A red box highlights a custom text area with two lines: 'This is a custom line of text.' and 'This is a second custom line of text.'. Below this is an 'Input Form' section with a 'Placeholders' header. It contains three input fields for 'Target\_f1' (440), 'Target\_f2' (880), and 'Target\_f3' (1320), each with a corresponding label: 'Target 1st Eigenfrequency', 'Target 2nd Eigenfrequency', and 'Target 3rd Eigenfrequency'. To the right of the input form is a diagram of a tuning fork with labeled dimensions: 'Rod width', 'Rod length', 'Radius', 'Grip length', and 'Grip width'. A red box highlights this diagram. At the bottom, there is a 'Start Analysis' button and an 'optiSLang logs' button. A blue navigation arrow is in the bottom right corner.



# Ansys App Portal and Deployment Templates

- Set of **enablement** services that would be associated to an infrastructure to support the **deployment** and **management** of the web applications
- The templates are composed of several **services**:
  - App Portal
  - Orchestration
  - Identity and Access Management
  - High Performance Computing Services
  - API Gateway
  - Observability

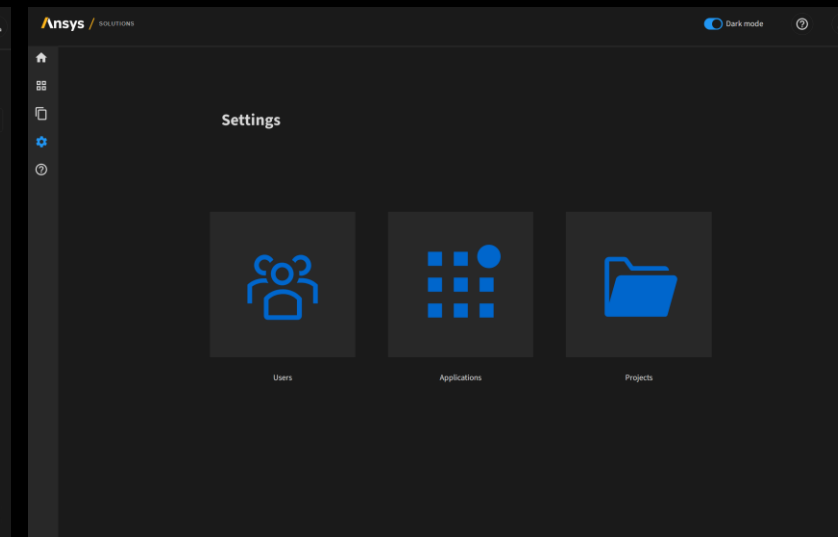
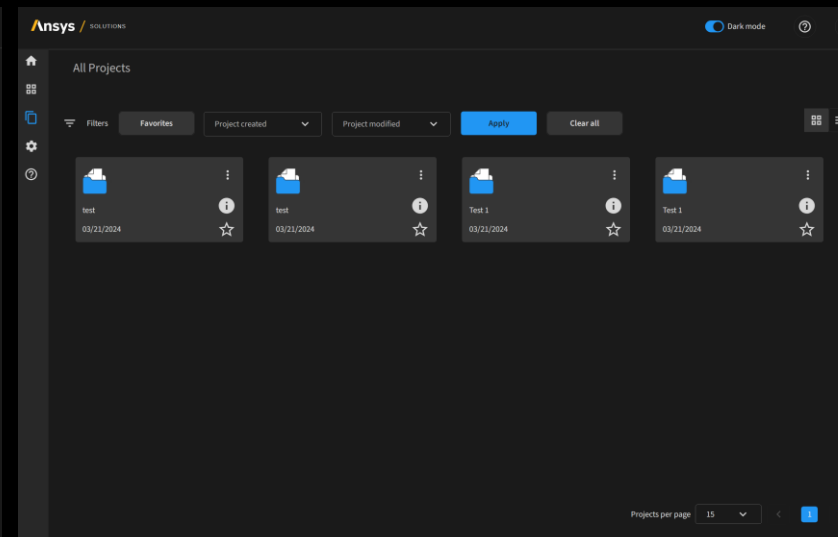
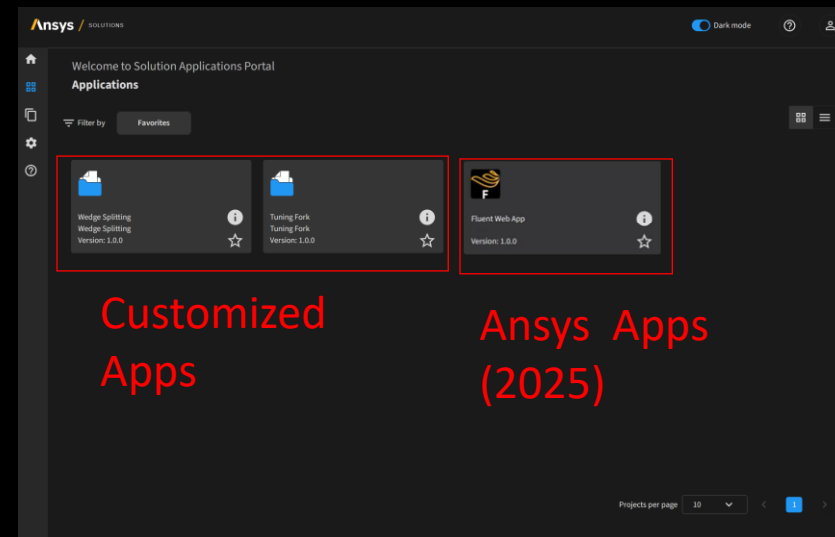
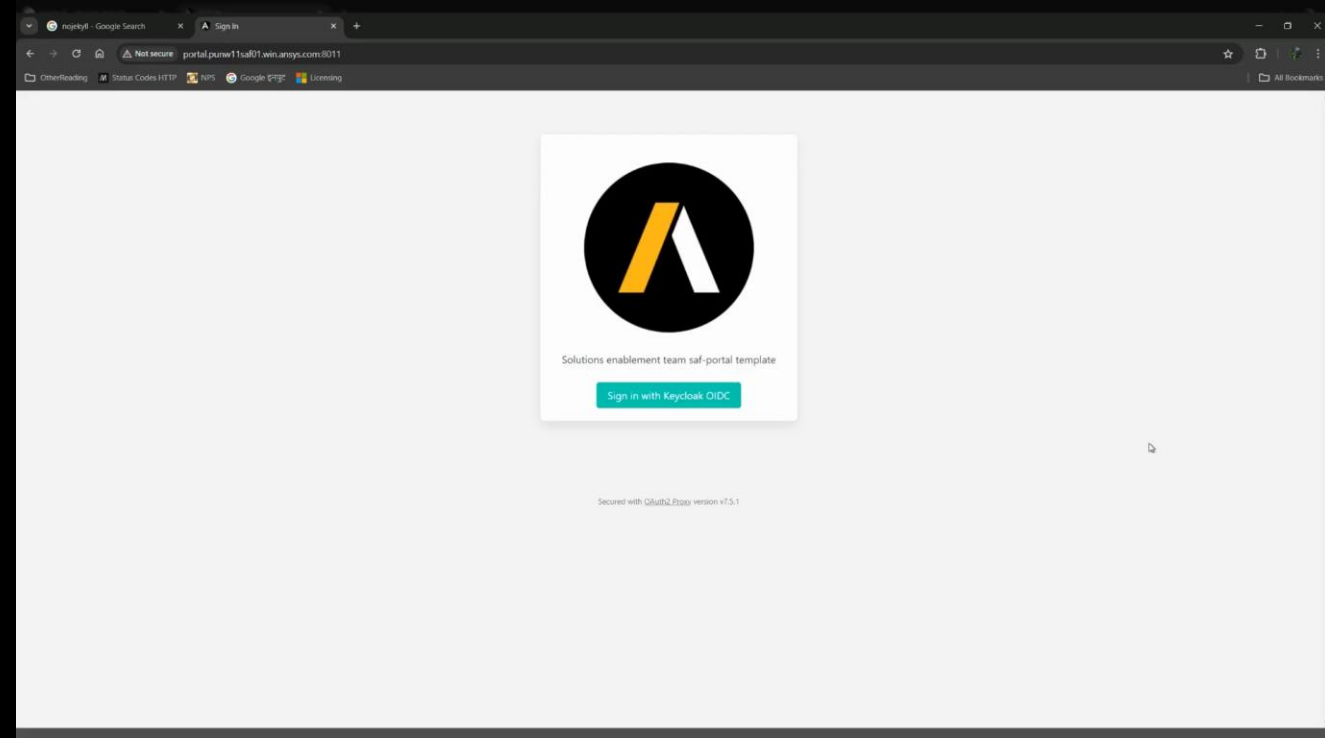


These packages are delivered through the Ansys Customer Portal in a **Continuous Integration and Continuous Delivery (CI-CD)** way!

# The App Portal

## Capabilities:

- Dashboard to access apps and projects
- Possibility to upload and update versioned apps
- Authentication and authorization
- User management
- Administration controls



# More features coming in a continuous way!

The screenshot shows the Ansys Solutions Portal interface. The browser address bar indicates the URL is `portal.local.se/#/home`. The page title is "Welcome to the Solution Applications Portal". A sidebar on the left contains navigation links for Home, Applications, Projects, and Settings. A "Create application" button is visible in the top right. The "Favorite Applications" section is currently empty, displaying a star icon and the message "No favorite applications". The "Recent Applications" section contains a table with the following data:

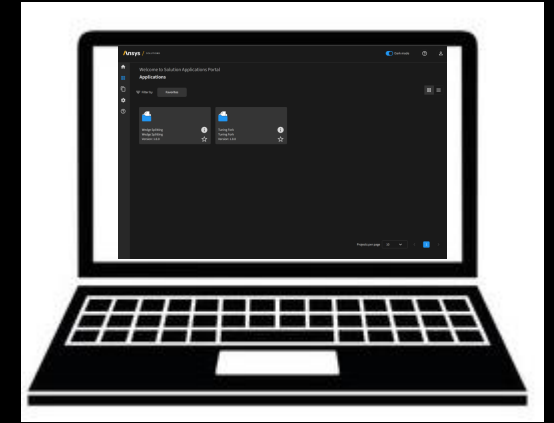
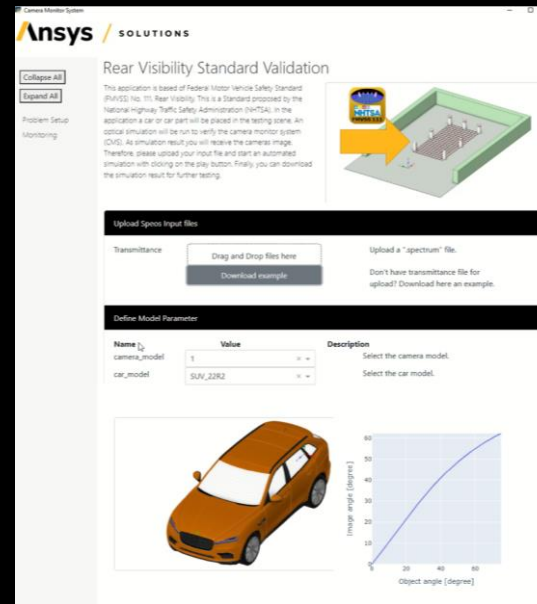
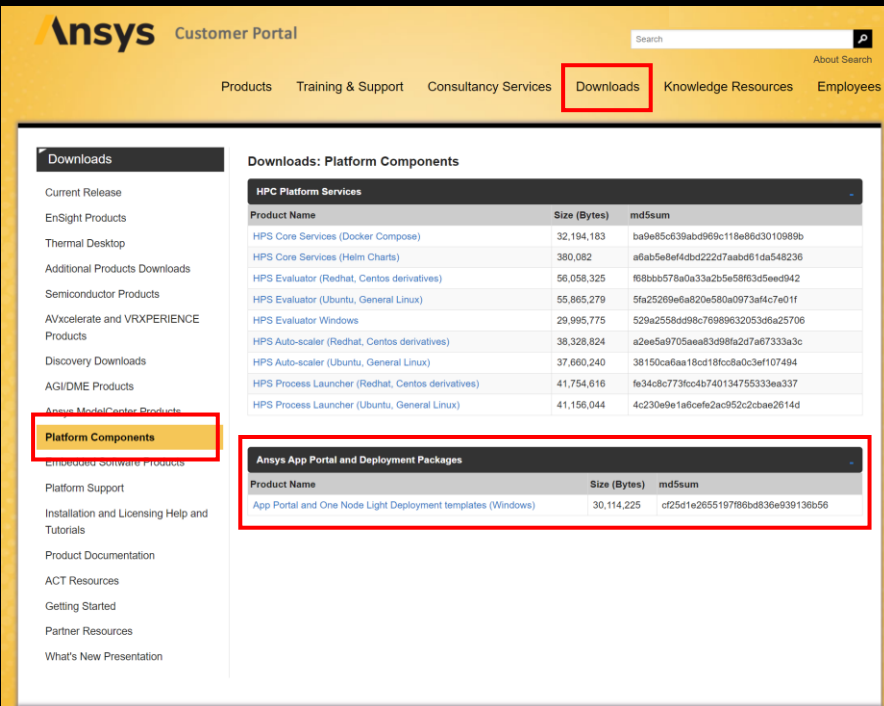
Name	Description	Last opened	Version	Info	Star	More
wedge-splitting-custom-2		09/18/2024	0.1.dev0	i	☆	...
oscillator-calibration		09/18/2024	0.1.dev0	i	☆	...
wedge-splitting		09/18/2024	0.1.dev0	i	☆	...
fluent-web	fluent-web	09/18/2024	1.0	i	☆	...

**Disclaimer:**  
This is currently under development and Ansys does not guarantee that the exact features shown here will be released

# What's next?

1. Start building and testing locally your new generation web apps with the latest oSL release (24R2 SP2)

2. Download the first deployment template from the Ansys Customer Portal



3a. Install the platform in your local machine

or

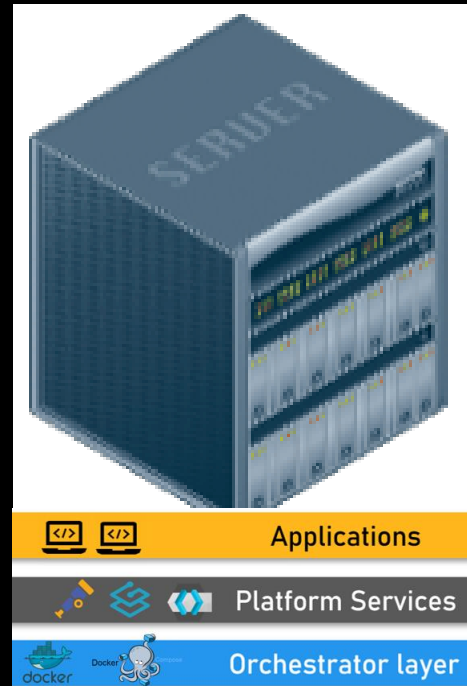
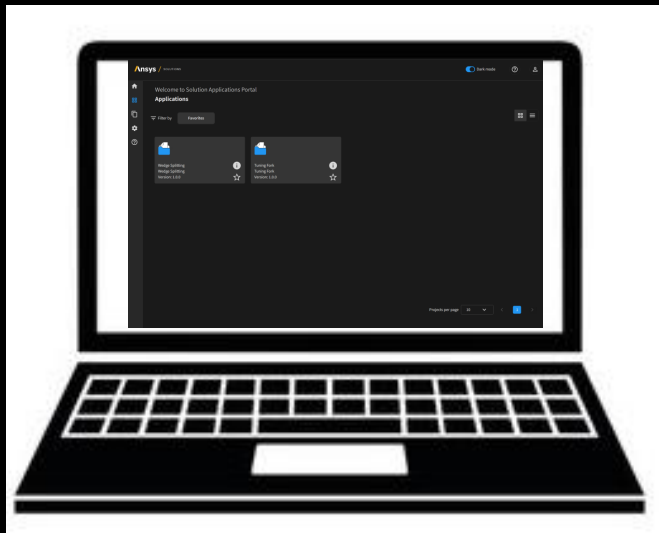
3b. Install the platform in a network machine



# Do you need more computational resources?

New deployment template coming soon in the **Ansys Customer Portal** to enable launching the Ansys products in a separate machine/cluster

The heavy simulation work is sent to a **cluster** so that the applications server's work is offloaded, and **more users** can connect to it



# Do you need **even** more computational resources?

New deployment templates in the roadmap to enable full **horizontally scalability**

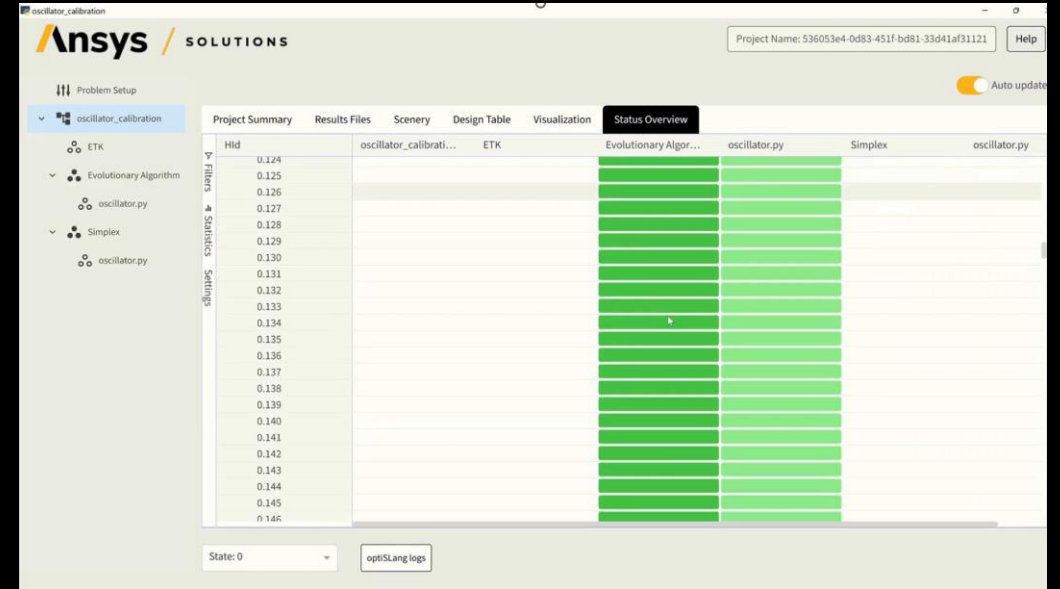
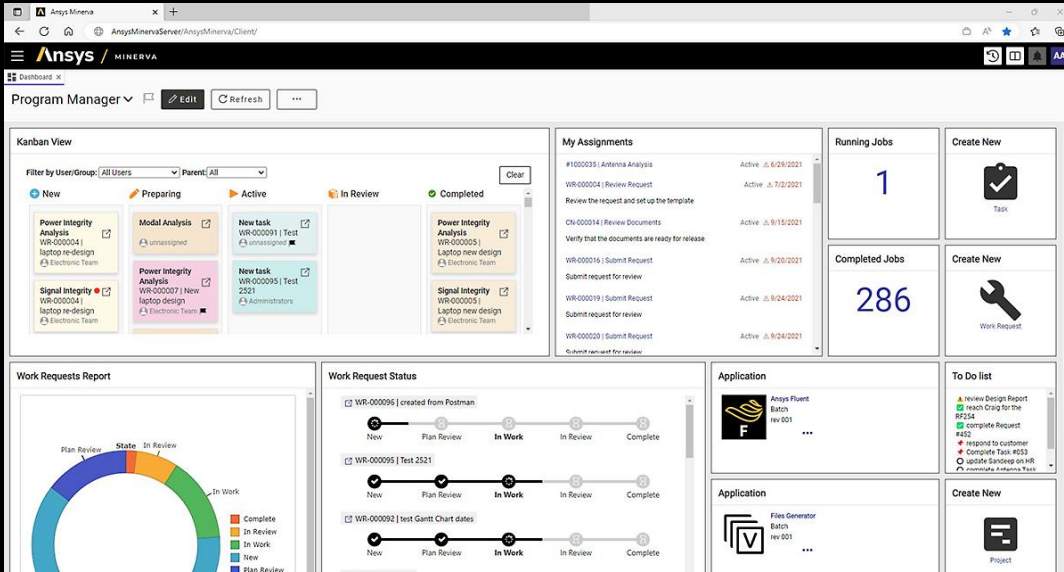


The number of application servers or nodes is **adjusted dynamically, scaling up** to handle increased user demand or **scaling down** during periods of lower usage





# What about Data Management?



Collaborative ongoing efforts to synchronize the data generated in the App with Ansys Minerva in order to provide a **full digital thread!**

# Summary

- Ansys is **standardizing** the development of simulation web apps for our users.
- A **new generation** of optiSLang web apps is now available to optiSLang users.
- You can still use your **optiSLang workflow** and create a web app with the new stack.
- The process for creating an optiSLang web app **remains unchanged** from the previous stack.
- The platform where the solution's stack will be deployed is being delivered through the Ansys Customer Portal and is **updated regularly**, allowing users to benefit from quick enhancements and bug fixes.
- An **initial deployment template** is already available, enabling these web apps to be deployed in a collaborative environment.
- **New deployment** templates will be released soon, providing **additional scalability**.



The Ansys logo is positioned on the left side of the image. It features a stylized 'A' icon composed of two parallel diagonal lines, one yellow and one white, followed by the word 'Ansys' in a white, bold, sans-serif font.

**Ansys**

