



Ansys + I.S.M. Conseil

“Unlike traditional FEA solvers, Ansys OnScale provided us with an affordable cloud-based simulation platform that allowed us to perform static simulations on several panel designs simultaneously to ensure their structural integrity when used in a smelting factory.”

— **Michaël Morin**

Mechanical Engineer / I.S.M. Conseil

/ Smelten Factory Improves Safety Through Cloud-Based Simulation

I.S.M. Conseil, a drafting and design consultancy based in Quebec, faced the challenge of optimizing the design of protective floor panels used in smelting factories. To overcome financial constraints and time limitations, I.S.M. Conseil turned to Ansys OnScale Solve, a cloud-based finite element analysis (FEA) solution offered by Amazon Web Services (AWS) Partner OnScale, an Ansys company. By leveraging the power of AWS, I.S.M. Conseil achieved significant time savings and cost reductions, successfully completing the project with exceptional efficiency and delivering improved worker safety.

/ Challenges

Smelting is the method for extracting metal from ore. Floor panels used in smelting operations must be designed to withstand intense temperatures and protect workers from harmful compounds, such as hydrogen fluoride, produced during the process. I.S.M. Conseil was tasked with optimizing the design of these panels to ensure worker safety. However, traditional FEA tools and powerful computers were financially impractical for the small firm, which relied on a single-shared CAD software license. The search for an affordable and efficient simulation tool led them to OnScale Solve.



/ Ansys Products Used

- Ansys OnScale Solve

/ Engineering Solution

OnScale Solve, a cloud-based multiphysics platform, offered I.S.M. Conseil a scalable and cost-effective solution for digital prototyping and testing. By utilizing a solver-as-a-service subscription model, OnScale Solve eliminates licensing costs and provides flexibility in project usage. The platform's automated meshing feature reduces the time-consuming process of preparing simulations, allowing I.S.M. Conseil to run 18 FEA simulations in less than 30 minutes, with multiple panel designs evaluated simultaneously.

Built on AWS, OnScale Solve harnesses the extensive compute power and scalability of the cloud. By utilizing services such as Amazon DynamoDB, Amazon Elastic Compute Cloud (EC2), and Amazon S3, OnScale Solve optimizes its use of computational resources and ensures reliability. Monitoring and updates are handled by Amazon CloudWatch and Amazon ECR, while AWS Lambda delivers continuous compute power availability without the need for server management. The collaboration between OnScale, an Ansys company, and AWS has resulted in a robust and secure platform.

By adopting OnScale Solve, I.S.M. Conseil achieved significant cost savings by reducing the fabrication cost of the floor panels through fewer physical prototypes. The elimination of complex and unused software licenses provided additional financial benefits to the small company. Furthermore, OnScale Solve enabled I.S.M. Conseil to produce results 400% faster compared to competing products.

/ Benefits

- Reach results 400% faster compared to competing products.
- Engineers can leverage the near infinite compute power in the cloud.

/ Results

I.S.M. Conseil's partnership with OnScale, an Ansys company, and their utilization of OnScale Solve proved instrumental in optimizing the design of smelting floor panels. By overcoming financial constraints and leveraging the cloud-based capabilities of Amazon Web Services (AWS), I.S.M. Conseil achieved exceptional efficiency, reduced costs, and delivered improved worker safety. The success of the project highlighted OnScale Solve as a powerful and accessible tool for professionals, small businesses, and enterprises.

/ Company Description

I.S.M. Conseil is a drafting and design consultancy firm based in Quebec, Canada.

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When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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