



# DESIGNING SAFER AUTOMOBILES

## SUBARU MIGRATES HPC TO THE CLOUD WITH ALTAIR AND ORACLE CLOUD INFRASTRUCTURE

### About the Customer

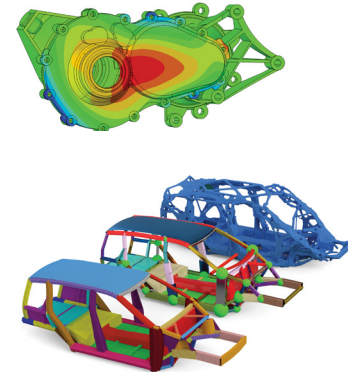
Global automobile and aircraft manufacturer Subaru puts safety first by practicing human-oriented manufacturing. With roots in aviation, its automotive division has evolved to become its core business, and the company delivers value for customers by continually improving and refining designs.

**Subaru's goal is to achieve zero fatal traffic accidents by 2030.** The number of fatal and serious injuries per million vehicles sold has already been halved in the last decade, and to further advance the initiative, Subaru must continue to innovate and ensure high collision safety — which requires conducting CAE simulations using high-performance computing (HPC).



Our CAE users needed more processing power, but space was limited and private cloud was costly. Oracle and Altair helped us quickly deploy a new OCI HPC environment that accommodated our computing needs and set us up for future expansion.

Yoshihiro Takekuma, IT  
Operation Management,  
Subaru



### Their Challenge

Subaru has long maintained its own HPC environment for simulation near its main manufacturing facility in Japan's Gunma prefecture, but as the **computational processing requirements for simulation increased**, the Subaru team ran into a shortage of power and space for expansion. They began using a private cloud located in a remote data center in Tokyo, which necessitated a dedicated line for user access. Because the cost was high, they decided to also evaluate public cloud options, and they sought recommendations from the Japan Automobile Manufacturers Association's cloud working group.

### Our Solution

After careful consideration of factors including cost, performance, security, ease of use, and expert support, Subaru selected Oracle Cloud Infrastructure (OCI) with workload management by Altair® PBS Professional®, a **solution they already used and trusted**. PBS Professional comes with a built-in GUI that empowers users to extend their HPC resources and utilize dynamic cloud bursting for peak-time workloads. Preliminary verification at Subaru confirmed that calculation processing wouldn't be compromised by a move to the cloud, and they optimized their new environment to ensure efficient performance.

When Subaru migrated its collision and fluid simulation environment to OCI, it was a large-scale operation that was completed in around six weeks — a **significantly shorter deployment time than the 3-4 months it would typically take to expand an on-premises HPC environment**. Their CAE users have been happy with the change. In addition to performance optimizations like increasing per-node memory capacity, the team also reduced the amount of data transfer required by setting up remote preprocessing. Throughout the transition process Subaru stayed tuned in to user needs by listening to feedback and thoroughly testing new procedures.

### Results

During the transition, the Subaru team appreciated Altair and Oracle's expert technical support. By migrating from private cloud to OCI, **Subaru reduced the cost of HPC resources by hundreds of millions of yen**, and the effect of reducing labor requirements for private cloud operation and management was significant. Subaru is now leveraging OCI and Altair cloud technologies while retaining and building its own data center resources, which it will continue to use for projects like structural simulations that require detailed settings. Now Subaru is expanding its cloud HPC resources and using hybrid cloud for efficient, flexible, and cost-effective CAE to enable **continuous vehicle safety innovation**.

When Subaru needed to expand its data center, it moved to the cloud with OCI HPC services and Altair workload management for a performant and cost-effective HPC solution.