



# Major Manufacturer Streamlines Its Digital Engineering Workflows with Rescale

A global R&D team adopts Rescale's Elastic Cloud Workstation to move CAD, pre-processing, solving, and post-processing into the cloud, uniting its engineering workflows and avoiding delays and costs from physical workstations

## CASE STUDY



### INDUSTRY

Automotive  
Manufacturing

### KEY RESULTS

- » United HPC workflows in the cloud
- » Created virtual workstations with nearly unlimited, on-demand capacity
- » Greatly reduced costs of running workstations in the cloud with “suspension” capabilities
- » Further accelerated R&D innovation speed by eliminating extensive waits on uploading or downloading simulations and other analysis data

Modern manufacturers depend on digital engineering to drive their product development efforts.

And speed is often critical. That is certainly the case for one of Rescale's customers, a global manufacturer in the automotive industry. The quicker its R&D teams can innovate using digital models and sophisticated simulation software, the faster it can confidently offer new designs to its customers and win contracts to grow its revenues.

As a Rescale customer for several years, this organization works with multiple HPC cloud services providers to access the high performance computing (HPC) needed to power its digital engineering. This multi-cloud approach has brought the organization many benefits, including accelerating its product development times dramatically while significantly improving its software licensing management to avoid unnecessary costs.

But the manufacturer knew it could use the Rescale platform to gain even more benefits from cloud HPC. By using Rescale's Elastic Cloud Workstations, the organization is now able to virtualize its engineering workstations to capitalize on the intrinsic benefits of the cloud while flexibly managing its virtual workstation to avoid unnecessary costs.

### TECHNOLOGY CHALLENGES

Workstations provide digital engineers a visual interface for an HPC batch job. It is the way they can observe the job and view its output, as well as providing a digital environment to carry out both pre-processing and post-processing tasks.

Cloud-based workstations offer significant benefits for engineering teams. Unlike traditional physical workstations that typically lived under desks, cloud workstations are not limited in their compute capacity, having immediate access to state-of-the-art supercomputing clusters. And all of this can be accessed from anywhere on a simple laptop computer.

Also, cloud-based workstations make it possible to conduct post-processing in the same cloud as the output file, helping drive further efficiencies and uniting cloud HPC batch jobs and workstations in one environment.

Workstations are also great for running smaller digital test models that don't require the full power of a supercomputing cluster, though with the cloud they can certainly scale up as necessary.

*The manufacturer is benefitting from a more efficient use of its most valuable product development resource: its engineers.*

Just as with data centers, there are many benefits for migrating workstations into the cloud. But as with any cloud service, you pay for what you use.

So while cloud-based workstations offer key advantages to Rescale's customer, the organization wanted to avoid the costs of cloud compute services for when they weren't using the workstations. During any given simulation, this is a significant portion of the total time to complete the experiment.

But simply turning off the workstations isn't practical. Starting a workstation in the cloud takes at least 30 minutes to boot up and configure. Configuration can take much longer, depending on the use case. If the organization "unplugged" the workstation from the cloud service to save money, it would lose all that configuration information and have to recreate it the next time its engineers boot up the workstation.

## HOW RESCALE HELPED

As experts on modern HPC complexities, Rescale provides the manufacturer with an easy way to gain the benefits of cloud workstations while minimizing any cloud costs for idle workstations.

Rescale offers Elastic Cloud Workstations as a core feature of its platform. This makes it quick and simple for R&D organizations to set up workstations in the cloud for any of their HPC computing needs.

Critically, Rescale Elastic Cloud Workstations now offer a new capability that makes it easy for the manufacturer's R&D teams to "stop" a workstation without losing its current state and configurations.

Known as workstation suspension, this unique Rescale feature gives the manufacturer's R&D teams the ability to turn workstations on and off without disrupting engineering workflows.

A user simply has to click a button and an image of the workstation's state is written to a disc. To start up the workstation again only takes about two minutes.

## RESULTS

With Rescale, the global automotive manufacturer can use the cloud on its own terms.

It is gaining all the benefits of supercomputing clusters in the cloud to run its HPC simulations batch jobs. At the same time, it is now using the Rescale platform to move its workstations into the cloud to unite its engineering processes and bring greater efficiencies and speed to its product development.

With its workstations fully virtualized, it now seamlessly carries out pre-processing and post-processing work, as well as easily monitoring HPC jobs to check on progress.

Most importantly, the organization is benefitting from a more efficient use of its most valuable product development resource: its engineers.

With hyper-efficient cloud workstations and on-demand, multi-cloud HPC services, its engineering and product development teams are free to innovate as fast as possible.

*Rescale's Elastic Cloud Workstations makes it easy for the manufacturer's R&D teams to "stop" a workstation without losing its current state and configurations.*



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### About Rescale

Rescale provides high performance computing built for the cloud to empower engineers while giving IT security and control. The Rescale platform makes it simple for engineers and scientists to harness the most advanced software and computing architectures for cutting-edge, simulation, and AI-driven innovation. For IT, the Rescale platform provides full-stack security and support, and delivers policy-based financial and architectural controls to maximize performance and efficiency. Rescale powers the world's leading companies to accelerate innovation across industries including life sciences, automotive, energy, semiconductor, aerospace, and manufacturing.