Smarter fluid dynamics testing

Smarter technology for all

Lenovo

Lenovo
High performance computing

Dallara designs faster, smarter, more efficient racecars with a new Lenovo HPC cluster, powered by Intel®, that was revved and ready within months of getting the green light.

Image courtesy of Dallara Automobili

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Background

Dallara Automobili's business is speed, literally. In a sport where fractions of a second separate winners from the rest of the pack, the racecar designer produces and develops chassis for some of the most renowned car companies in the world, including Alfa Romeo, Audi, Bugatti, Ferrari, Lamborghini and Maserati.

With this high-performance pedigree, Dallara upholds the highest standards of quality and innovation at every stage in the process, from conception to implementation to manufacturing.

In the constant pursuit of faster, lighter, more efficient designs, Dallara's team harnesses the latest in 3D modeling, structural analysis, computational fluid dynamics (CFD), finite element analysis (FEA) and vehicle dynamic driving simulations.

Designers rely on these simulations to rigorously test concepts before the car is physically built, under environmental conditions that would be impossible to replicate in a traditional wind tunnel.

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Challenge

To meet increasing demand for CFD and FEA simulations, their team needed a high performance computing (HPC) infrastructure with the compute to handle data-intensive workloads.

They also requested the flexibility to accommodate a virtual desktop infrastructure (VDI) environment, which would make it easier for more team members to run simulations from their workstations.

And, not surprisingly, they needed it fast.

Getting under the hood.

Dallara partnered with Lenovo Professional Services to design, test and implement a solution that met all their requirements. They decided on a Lenovo NeXtScale cluster, powered by high-performance Intel® Xeon® processors, and a software-defined storage solution based on DataCore™ SANsymphony running on Lenovo servers. The team then spooled up ten additional Lenovo servers as the foundation for its VDI environment.

With these new high-performance tools in their toolbox, it was time to see how they performed where the rubber meets the road.

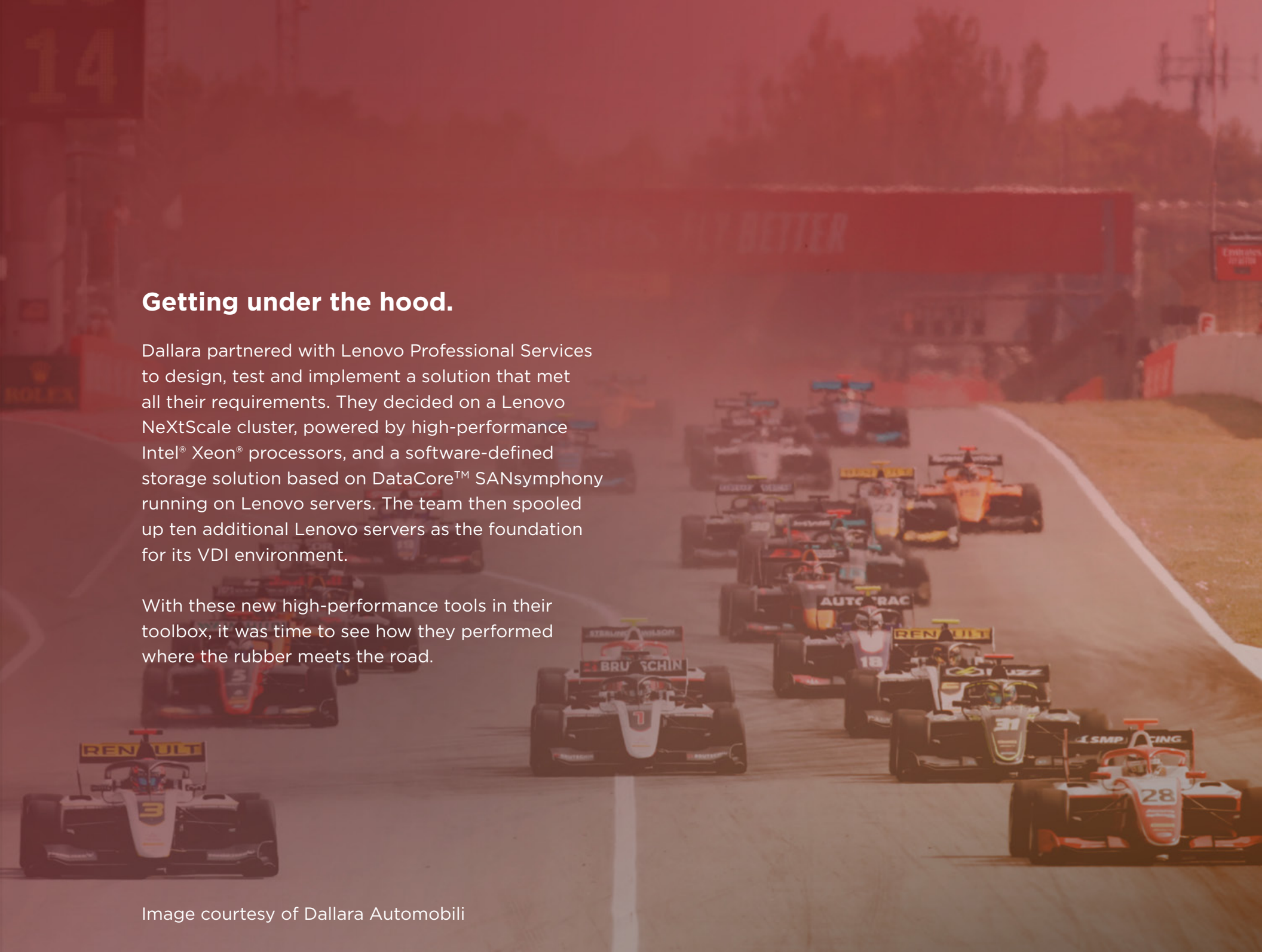

Image courtesy of Dallara Automobili

“Lenovo delivered all the hardware really quickly, so we were able to get the HPC and VDI solutions up and running within a few months of signing the contract. The Lenovo Professional Services team helped us to install and configure the systems to meet our specific requirements.”

Fabrizio Arbucci
Information and Communications Technology Manager, Dallara

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Results

The new HPC environment gave Dallara's designers the speed they needed to keep their competitive edge. The team can now run CFD models twice as fast.

Their VDI environment is also helping teams work smarter—and in more places—thanks to sever-level processing that gives users a reliable workstation experience, even from a laptop.

Dallara already has their sights on future applications of HPC. They're planning to run workloads on the VDI environment at night to take full advantage of the considerable compute power at their fingertips.

- ✓ **Run CFD and FEA simulations 2x as fast**
- ✓ **Run workloads simultaneously for faster analysis and insights**
- ✓ **Increased workstation flexibility enables remote work**
- ✓ **Improved security ensures data compliance**

“Today, we can run more CFD and FEA simulations in a shorter space of time and have significantly improved workstation flexibility, security and performance. Lenovo technology powers the tools we need to continue our pursuit of excellence.”

Fabrizio Arbucci
Information and Communications Technology Manager, Dallara

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How can HPC put your business in the fast lane?

Smarter business transformation starts with the right solution—and a partner with a proven track record.

Explore HPC Solutions