

Siemens Simcenter STAR-CCM+ on Dell EMC Infrastructure

Tap into the power of HPC to speed
product and design simulations

Customer results

10,000

simulations per season¹

4.5X

faster simulations²

15,000

CAT iterations over a weekend³

Speeding time to market with new and innovative products while lowering costs and accurately predicting real-world product performance can create a competitive advantage. Reaching these goals requires specialized simulation software, powered by high performance computing. Computer-aided engineering software, like Siemens® Simcenter™ STAR-CCM+®, is commonly used across a wide range of computational fluid dynamics (CFD) and multiphysics applications. It's capable of capturing the physics that will influence product performance, enabling engineers to predict performance changes in response to multiple parametric design changes.

With decades of experience, Dell Technologies is helping digital manufacturers transform performance for workloads like Simcenter STAR-CCM+ with Dell EMC infrastructure. These solutions, comprised of scalable, flexible building blocks simplify design and speed time to results. They include servers, storage, networking, software and services in engineering-validated yet customizable designs that deploy quickly and provide better performance and easier scaling with less risk. Plus, they've been rigorously tested for computer-aided engineering and design applications.

Simcenter STAR-CCM+ is CFD and multiphysics software for the simulation of products and designs operating under real-world conditions. It provides engineers with automated design exploration and optimization, allowing them to efficiently explore the entire design space instead of focusing on single-point design scenarios.

Validated Design and performance benchmarking

The [Dell Technologies Validated Design for Siemens' Simcenter STAR-CCM+](#) outlines the building blocks and performance of the engineering-validated design for Siemens Simcenter STAR-CCM+. The configuration is comprised of Dell EMC PowerEdge servers, Dell EMC PowerSwitch networking and Dell EMC PowerVault storage, with an optional single point of contact for support. Workload management and job scheduling is performed with Bright Cluster Manager®.

¹ Dell Technologies Case Study, "[McLaren Racing Delivers DoubleDigit Performance Improvements](#)," July 2021.

² Dell Technologies Case Study, "[Driving golf forward with iron-clad digital tools](#)," June 2021.

³ Dell Technologies Video Case Study, "[High Performance Computing Drives Cummins' Industry Leading Engine Design and Development](#)," accessed October 2021.

Because every organization is different, your solution configuration can be customized based on your application mix and the types of simulations being performed. The architecture provides a table of recommended options along with considerations for making these selections. Throughout the process, Dell Technologies HPC and AI experts are available to assist you with designing a solution for your specific needs. [Dell Technologies Services](#) — ranging from consulting and education to deployment and support — are available when and where you need them.

Infrastructure servers	Compute building blocks	Operational storage	System networking	Management software
PowerEdge R650 or R6515	PowerEdge R650, R750, C6520, R6515, R6525 or C6525	PowerEdge R740xd, R7515 or PowerScale A200	<ul style="list-style-type: none">PowerSwitch S3048-ON Ethernet switchNVIDIA® QM8790 HDR InfiniBand®	Bright Cluster Manager (recommended)

Resources

- See the [Design Guide AMD](#)
- See the [Design Guide Intel](#)
- Read the [engineering blog](#)
- Explore the [Dell Technologies HPC & AI Innovation Lab](#).
- Join the Dell Technologies HPC Community at [dellhpc.org](#).

Learn more

[Dell Technologies InfoHub](#)
[delltechnologies.com/referencearchitectures](#)
[delltechnologies.com/hpc](#)

Siemens Simcenter STAR-CCM+ and Dell Technologies

Simcenter STAR-CCM+ is a complete multiphysics solution for the simulation of products and designs operating under real-world conditions. Uniquely, Simcenter STAR-CCM+ brings automated design exploration and optimization to the simulation toolkit of every engineer, allowing you to efficiently explore the entire design space instead of focusing on single-point design scenarios.

Dell Technologies enables organizations to modernize, automate and transform their data center using industry-leading converged infrastructure, servers, storage and data protection technologies. Businesses get a trusted foundation to transform their IT and develop new and better ways to work through hybrid cloud, the creation of cloud-native applications and big data solutions.

