

DIGITAL INDUSTRIES SOFTWARE

Simcenter X

Leveraging the power and flexibility of the cloud for CFD simulation

Benefits

- Leverage the power and flexibility of the cloud for CFD simulation
- Easily access burst capacity as needed
- Invest in predictable operational expenses with minimal IT infrastructure for low cost of ownership
- Eliminate the complexity, time, cost and risk of hardware installation, maintenance and upgrades

Summary

Engineering organizations are continually challenged to accelerate time-to-market while increasing cost efficiency of operations. Simulation is critical to achieving these goals but configuring and managing the necessary information technology (IT) infrastructure requires significant investment and expertise. Relying on on-premises hardware and software makes it challenging to implement simulation in a cost-efficient manner without limiting productivity.

Using Simcenter™ X software provides a new way to access and deploy Siemens Digital Industries Software's simulation and test solutions, starting with Simcenter STAR-CCM+™ software, which gives organizations and simulation teams a great degree of flexibility and freedom. Historically, purchasing hardware and software licenses upfront has set limits on productivity and efficiency that can only be overcome by moving processes to the cloud. Leveraging the power and infrastructure of Amazon Web Services (AWS), Simcenter X offers engineering desktop and high-performance computing (HPC) environments in the cloud that are accessible via a web browser.

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Features

- Instant access to the complete Simcenter STAR-CCM+ workflow with a web browser
- Interactive pre/postprocessing in virtual desktop environment
- Virtual HPC cluster for running demanding simulations at scale
- Turnkey solution with simple pay-as-you-go pricing covering hardware and software

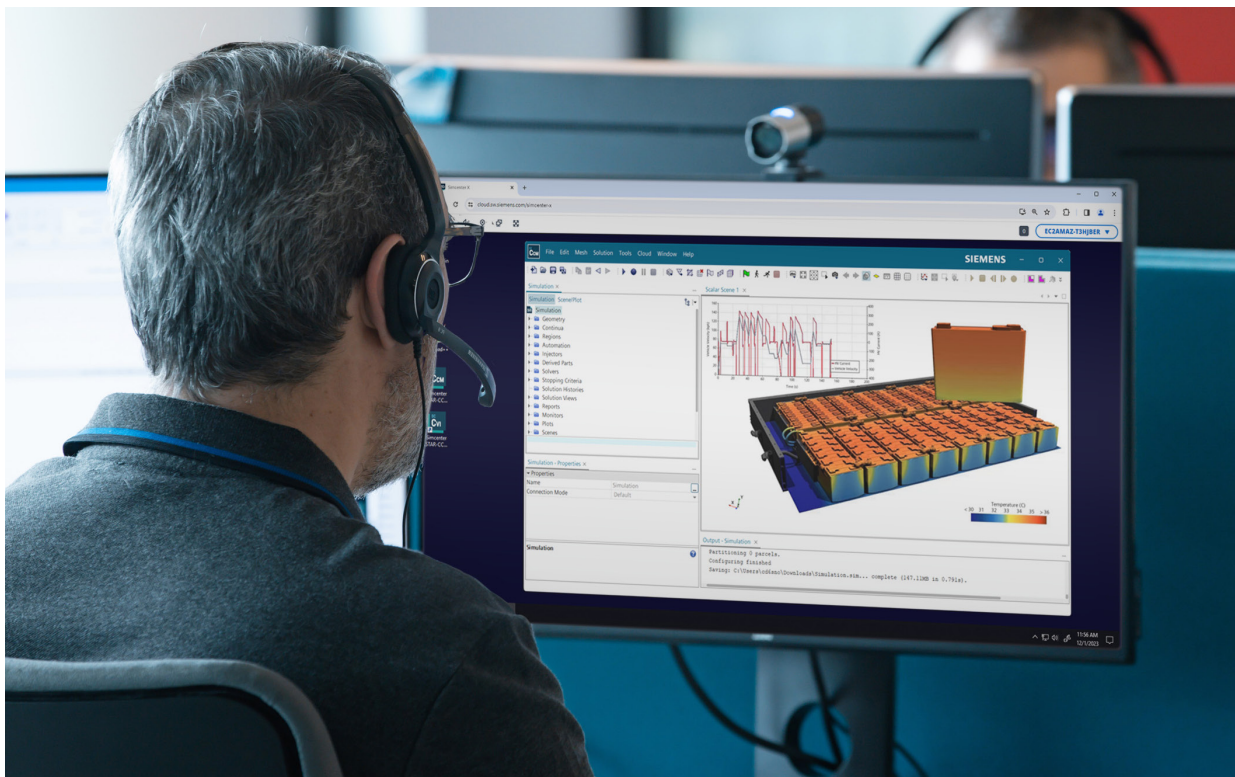
Simulation as a turnkey solution

Simcenter X has been designed as a turnkey solution that is instantly accessible and instantiated on-demand. This means you control resource allocation and cost, with named users consuming prepaid credits only while they are using the services. You can work entirely in the cloud with no on-premises installation or tap into Simcenter X for extra capacity when business needs require it. Simcenter X is fully managed and supported by Siemens so you only need to interact with a single company.

Virtual engineering desktop and HPC cluster

The Simcenter X workspace provides everything needed for the end-to-end simulation workflow. You can set up simulations from scratch and analyze them in-depth using a remote desktop environment powered by a high-specification cloud instance. Use it to access the familiar Simcenter STAR-CCM+ desktop application and share files and collaborate with colleagues using the Teamcenter® Share app. You have access to as many software licenses as you require while working in the remote desktop environment, limited only by the physical capacity of the cloud instance.

Simcenter and Teamcenter are part of the Siemens Xcelerator business platform of software, hardware and services.



Using Simcenter STAR-CCM+ for simulation analysis with the remote desktop capability of Simcenter X.



Using the cloud HPC capability in Simcenter X with live job monitoring and resource management.

You can run simulation jobs on a virtual cluster using the cloud HPC capability, launching either from a Simcenter X session or directly from your local machine, instantly scaling up to hundreds of cores. Using the effectively unlimited capacity of AWS, you can also scale out, exploring as many designs at the same time as you wish.

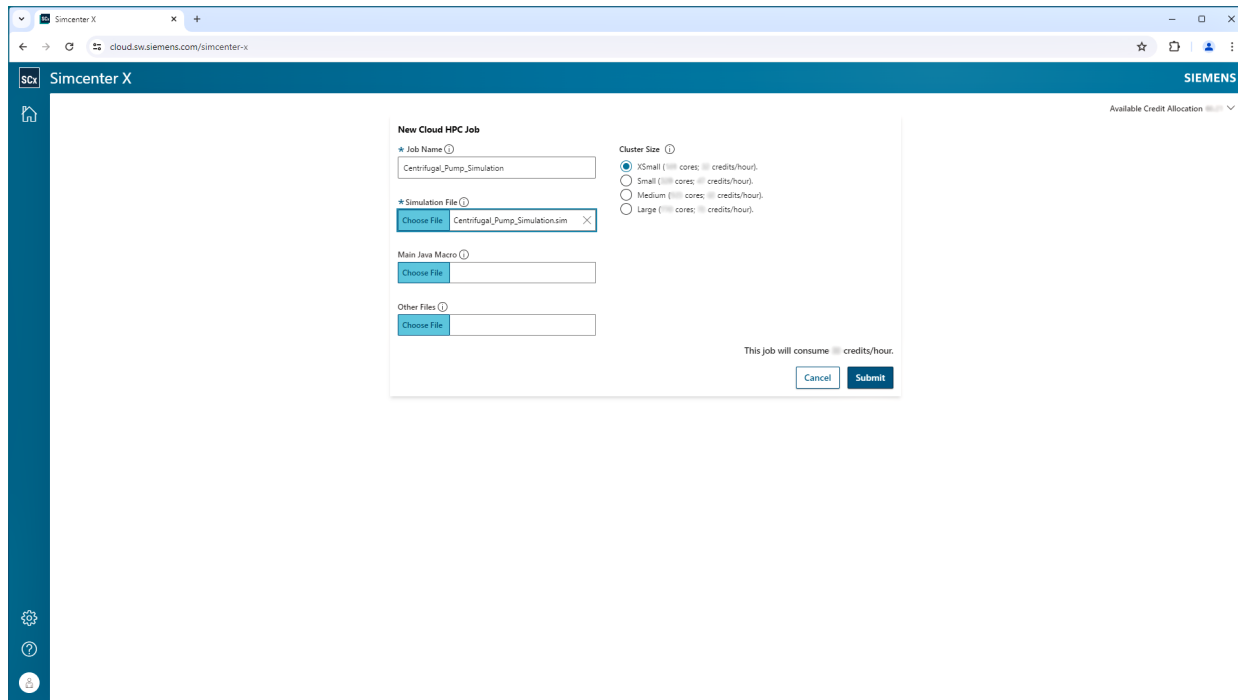
Access on any device, anywhere, any time

Accessing software with a web browser has become the norm for many tasks, but computer-aided engineering (CAE) simulation has its roots in complex and expensive hardware and software. Accessing CAE simulation on demand with a web browser means you don't need dedicated hardware for pre- and postprocessing and you don't need to schedule larger jobs to share limited resources.

An identical user experience on any device gives teams the ability to work from anywhere, no longer constrained by on-premises IT infrastructure. In addition to enabling remote working, Simcenter X also provides on-the-fly monitoring and control of live cloud HPC jobs, allowing you to view live plots and scenes as simulations in progress and immediately stop runs if needed.

Leverage latest hardware and software

HPC technology is both a rapidly evolving and complex landscape. This impacts on engineering organizations in two ways. First, securing capital budget and procurement for on-premises hardware is a slow process. Equipment is typically leased for several years, meaning by the time it is replaced it will no longer be extracting maximum value from the software being run. Second, HPC resources require



Using Simcenter X to perform simple and fast submissions of HPC jobs.

significant expertise to specify, configure and operate, whether those resources are on-premises or on a third-party cloud service.

Using Simcenter X significantly reduces the complexity of HPC, providing you with preconfigured, optimized hardware, software and infrastructure, requiring no additional training or expertise. No installation is required, and new features and versions become immediately available to users. Siemens has partnered with AWS to select and deliver cost-effective and robust infrastructure so you can remain focused on simulation work.

Secure, private and always available

Organizations are moving workloads to the cloud today for many different reasons, but security, privacy and availability are top concerns for all customers. Siemens has implemented a company-wide information security management system (ISMS) and Simcenter X complies with all its requirements.

Simcenter X has been designed and architected to provide a robust and dependable service for simulation users, incorporating the combined knowledge and best practices developed by Siemens and AWS. Additionally, Siemens follows industry standards on privacy and security and holds a range of certifications.

Pay only for what you use

Simcenter X is powered by prepaid credits. This makes it easy to understand how much you are paying for each project as well as allowing you to eliminate wasted costs as workloads vary.

A single credit type covers all costs, including hardware, software and data transfer, charged at a set rate per hour of usage. Consumption rates depend on the compute resource selected and are displayed in the Simcenter X application, as well as the number of credits consumed by current and completed jobs.

Type	Name	Status	Cost	Submitted	Run Time	Quick Actions
	Run on cluster	Running	10.00	2024/03/20, 11:00:00	07 mins	
	Meshing and final checks	Complete	0.70	2024/03/20, 10:00:00	07 mins	
	Initial setup	Complete	0.00	2024/03/20, 10:00:00	00 mins	

The Simcenter X workspace gives you full visibility into cost and resource usage.

There is no upper limit on the number of concurrent jobs that a user can launch. Since the credit consumption rate remains constant, the overall cost of running multiple jobs or of multiple users launching remote desktop sessions is the same whether jobs or sessions are run concurrently or sequentially.

Credits represent an entirely new way to budget for simulation activities, whether for everyday usage or to cover burst capacity needs. Transforming all related costs into an hourly charge makes it easy for organizations to scale operations up and down as required.

Credits can be purchased in packages of 1,000, 50,000 and 100,000 and are simple to buy from the Siemens Digital Exchange or from a Siemens account representative or reseller. Credits are valid for 12 months from the date of original purchase.

Credits can be purchased from the [Siemens Digital Exchange](#).

For more information on architecture and security, see the [Siemens-AWS white paper](#).

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