Simcenter STAR-CCM+ Power licensing

Unlocking the power of simulation with flexible and powerful licensing solutions

Benefits
- Enhance the power of simulation with powerful and flexible licensing solutions
- Accelerate throughput of large simulations
- Run hundreds of simulations concurrently to find trade-offs in design
- Cost-effectively scale compute resources to meet changes in simulation demand
- Customize licensing solutions for your specific simulation needs
- Maximize return on hardware and software investment

Features
- Simcenter STAR-CCM+ Power Session: unlimited core usage for a fixed price
- Simcenter STAR-CCM+ Power on Demand: pay by the hour for unlimited core usage
- Simcenter STAR-CCM+ Power Tokens: flexible needs-based usage

Summary
High-performance computing (HPC) is a key enabler for using high-fidelity simulations to shorten design cycles and drive product innovation. In the age of multicore computing, the cost of software, not hardware, is often the limiting factor in the use of large compute clusters. When analysis software is licensed on a per-core basis using the traditional licensing model, you can end up with compute resources that are underused, restricting your engineering ambitions. Flexible, cost-effective license schemes become essential to make the most of your hardware resource and unlock the power of simulation.

Simcenter STAR-CCM+ offers the solution
Simcenter™ STAR-CCM+™ software, which is part of Xcelerator, the comprehensive and integrated portfolio of software and services from Siemens Digital Industries Software, offers flexible and powerful licensing options that are customizable to meet your simulation needs and throughput requirements. No matter the size or location of your computing resources, our Power licensing options let you fully exploit them to maximize your return on simulation software and hardware investment.

Figure 1: Maximize return on hardware investment with Power licensing.

Simcenter STAR-CCM+ Power licensing

Our Power licensing makes HPC simulations cost-effective by breaking the link between software cost and core count with three unique licensing solutions:

- Power Session: Maximize your hardware investment with unlimited core usage for a fixed price. This license scheme is most beneficial to accelerate throughput of simulations by running on as many cores as possible

- Power on Demand: Only pay for what you need with unlimited Power Session access by the hour. This license scheme is most beneficial for cloud computing, burst capacity or infrequent usage

- Power Tokens: Needs-based usage provides you with the most flexibility to adapt to your evolving simulation needs and cost-effectively deploy design space exploration

  This includes:

  - Access to pre- and post-processing sessions using 10 Power Tokens

  - Parallelize single simulations as one Power Token activates one core

  - Adapt to your available resources to maximize throughput when exploring the design space
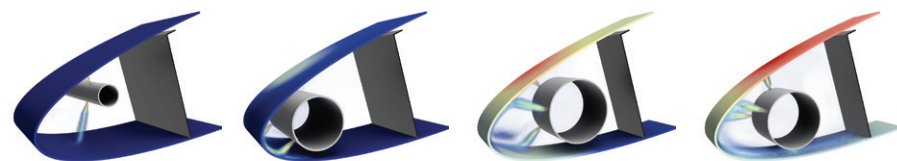

Figure 2: Improving the heat transfer performance of an aircraft ice protection system (courtesy: Honda Aircraft).

For users who run smaller simulations on fewer cores, we also offer traditional pay-by-the-core licensing. However, if you run on or more than 12 cores, the Power Session license is the optimal solution.

We can put together a customized configuration with a unique combination of Power license ingredients that meets your specific simulation and throughput requirements.

Maximizing throughput in large simulations

Simcenter STAR-CCM+ is optimized for high parallel efficiency and scalability. This enables running on higher core counts to reduce simulation turnaround time and quickly gain insight into industrial engineering problems. The Power Session license scheme will help you:

- Deploy all your available hardware resources for a single fixed price

- Achieve enhanced scalability for large simulations and get results in hours instead of days. As an example, running on 10,000 cores incurs the same software costs as running on 100 or 20 cores

Unlocking the power of design space exploration

Exploring design space early in the process is the key to increase product performance and drive innovation. Power Tokens provide you with the most flexibility to cost-effectively deploy design space exploration as they pay for either adding an additional core or a new variant in your exploration study. For example, if you buy 100 Power Tokens and one Simcenter STAR-CCM+ session, you can:

1. Either access 10 pre- and post-processing sessions.

2. Or run a single simulation on 100 cores.

3. Or run a design exploration study with:

   - 5 simultaneous designs on 20 cores each
   - or 10 simultaneous designs on 10 cores each
   - or 100 simultaneous designs on one core each

This way, you can easily adapt your resource allocation to your study requirement and project deadlines.
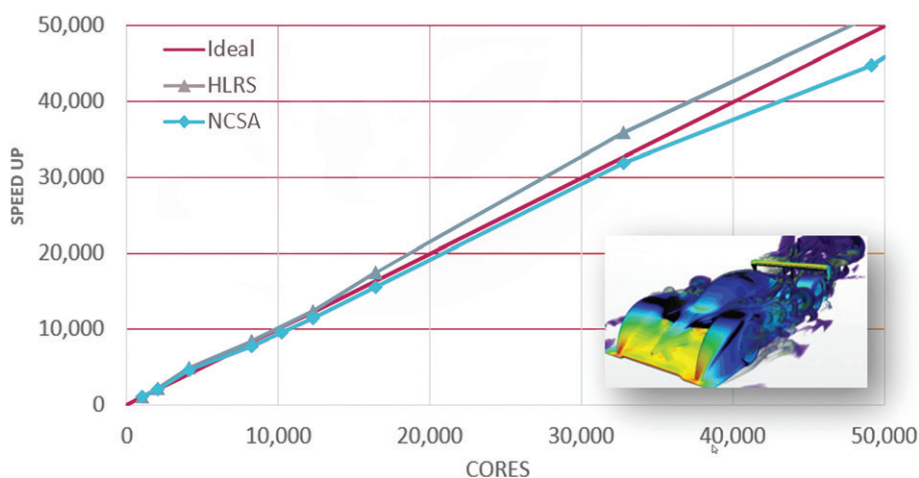

Figure 3: Simcenter STAR-CCM+ scales well at high core counts.

Leverage burst capacity at times of peak demand

Power on Demand is a licensing scheme counted by the wall hour that allows you to open unlimited sessions and run unlimited simulations on an infinite number of cores. This way you can:

- Get unlimited burst capacity for peak project loads, run multiple jobs at once and pay only for what you use

- Use it from any public/private cluster, network or cloud infrastructure

- Track billable hours and share between colleagues, subsidiaries and projects

For example, with 500 hours you can use:

- 1 job for 500 hours on 16 cores

- 5 jobs for 100 hours each on 128 cores
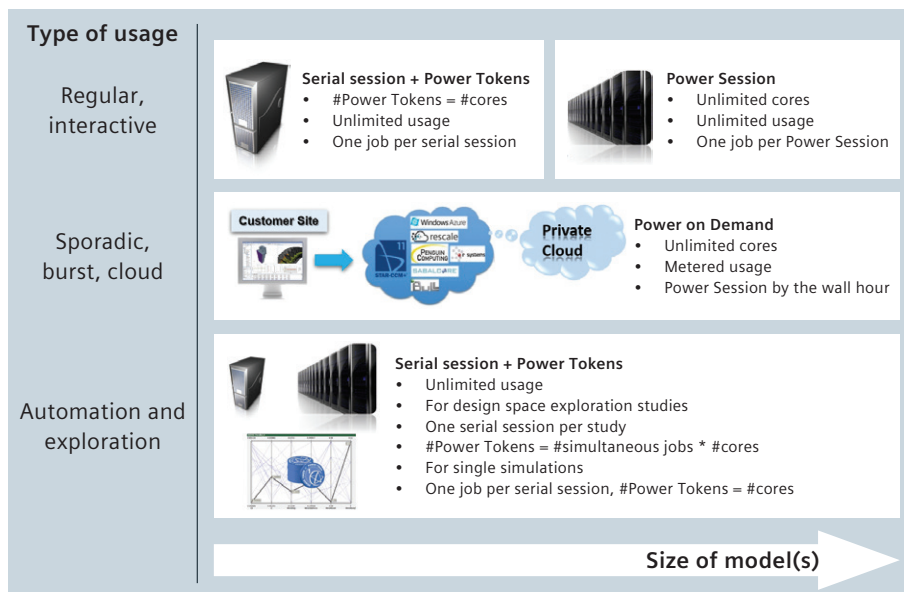
- 50 jobs for 10 hours each on 1,500 cores

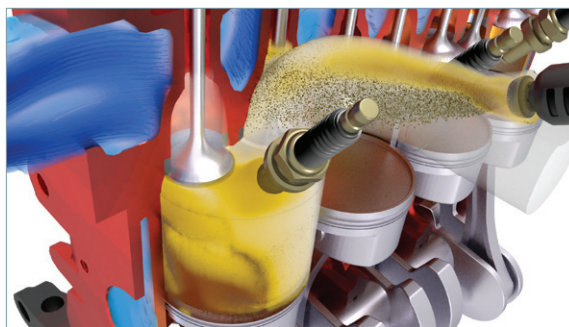Figure 4: Simcenter STAR-CCM+ flexible licensing options.

Figure 5: Running a high-fidelity in-cylinder simulation with Simcenter STAR-CCM+.