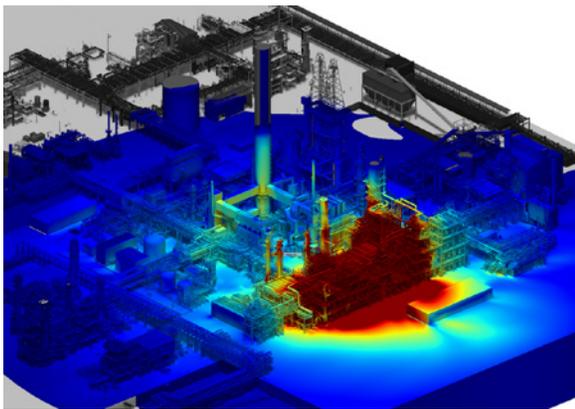


A unique explosion and fire modelling service for process-manufacturing industries



Images: Gexcon

Gexcon AS is a world-leading company in the field of safety and risk management and advanced dispersion, explosion and fire modelling. It provides a range of services including consultancy, training and R&D, as well as providing the FLACS CFD code for modelling explosions and atmospheric dispersions. A partnership between EPCC and GexCon AS has created a unique explosion-modelling service for the petrochemical, nuclear, and general process-manufacturing industries.

The challenge

FLACS is a computational fluid dynamics (CFD) code for modelling explosions and atmospheric dispersion. Industry safety engineers normally run FLACS on a local workstation to support a risk assessment programme. Completion of a full risk assessment could require thousands of simulations, which could take days if not weeks to complete on a local workstation. Using high performance computing (HPC) would allow multiple simulations to run in parallel and drastically reduce the overall simulation time. HPC acquisition however can be prohibitively expensive. GexCon and EPCC have responded to this challenge by introducing a unique service offering pay-per-use access to FLACS hosted on EPCC's HPC infrastructure.

How we helped

GexCon and EPCC collaborated in porting FLACS to EPCC's HPC infrastructure and in creating a fully provisioned, one-stop-shop service. The service is offered on a simple pay-per-use basis, allowing users to

reap the benefits of HPC without costly capital investment. GexCon provides the one-stop-shop experience including customer interface, support and customer billing. EPCC takes care of hosting, maintaining and supporting the HPC and data infrastructures, and usage accounting.

Pricing for the service is simple and straightforward: customers pay only for what software and hardware they use on a core/hour basis. Support, access bandwidth, and data storage are all provided at no extra charge, and there is no annual subscription fee.

The benefits

The partnership between EPCC and Gexcon has created a unique explosion-modelling service for the petrochemical, nuclear, and general process-manufacturing industries. Users benefit from easy, low cost access to a FLACS service that can reduce simulation time from weeks to a matter of hours. The service is accessed on a simple one-stop-shop basis. Users pay only for the simulation service used. Joint EPCC-GexCon service delivery ensures that users are fully supported throughout their workflow.

Free trial of FLACS high performance computing service

Gexcon offers FLACS users a free 1-month, no obligation, trial of this unique service. To book a free trial or to find out more, email FLACS@gexcon.com

EPCC: the UK's leading supercomputing centre

Supercomputing capability straight to your desktop



Introducing Cirrus: our latest computational service for industry.

Cirrus is an SGI ICE XA supercomputer comprising more than 5,000 cores – the equivalent of hundreds of desktop computers.

This facilitates calculations that would be impossible, or much slower, when carried out on conventional desktop computing systems, delivering results in hours to days instead of weeks or months.



Our Accelerator service: supercomputing on demand



Cirrus is just one part of our Accelerator service, which delivers high-performance computing capability at a fraction of the cost of buying and operating in-house HPC services.

Accelerator can be used as a:

- Transformative HPC resource accelerating development and discovery lifecycles
- Flexible HPC resource smoothing out demand peaks
- Contingency over internal HPC infrastructure failure

Accelerator provides access to:

- ARCHER and Blue Gene: our high-end compute systems for large-scale simulation and modelling challenges
- Cirrus: a midrange, industry-standard Linux cluster. An ideal platform for applying commercial software tools to solve a range of CFD and FEA simulation and modelling problems
- RDF: our large-scale data facility giving access to petabyte-scale data storage and archive facilities

With the security of our exceptional expertise

With over 80 highly-qualified permanent staff, we ensure you get the most from our systems. We can help you with:

- General HPC support
- Data management and analytics
- Computational modelling & simulation
- Training & consultancy
- Software development

To discuss our services for business, contact George Graham at EPCC:

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