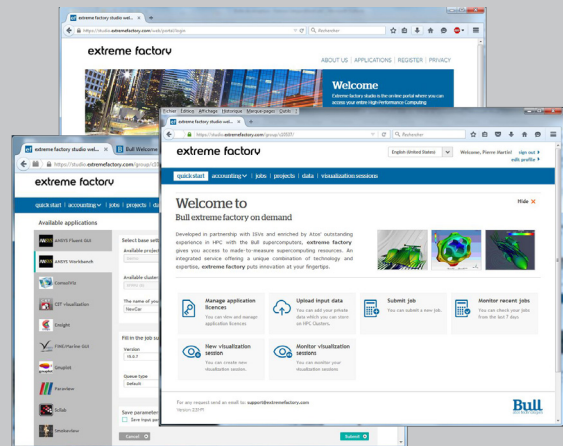


extreme factory computing studio



HPC and 3D visualization portal

extreme factory computing studio (XCS) is a portal designed for HPC cloud front-ends. With XCS, organizations can easily and centrally manage their compute and visualization workloads.

extreme factory on demand leverages XCS to power Bull's HPC-as-a-Service offer. Several ISVs use this technology for their HPC cloud. Many Atos HPC customers rely on XCS to access their private HPC resources.

The main components of XCS are a web portal and the associated system tools, pre-installed on a Bull server and ready to be integrated in any existing or new HPC environment. It incorporates all functionalities that are necessary to manage compute and visualization jobs for up to hundreds of users.

HPC job management

- ▶ Submit jobs using a click-through interface, good for newcomers and power users alike
- ▶ Manage data and workflows from remote locations
- ▶ Keep confidential data in the company's secure datacenter
- ▶ Implement multi-tenant HPC services
- ▶ Assign dedicated and protected environments to different user groups
- ▶ Share resource usage between teams and projects without any information leak
- ▶ Tailor the interface to your needs by defining elaborate application forms
- ▶ Monitor resource usage and manage credits with the accounting features
- ▶ Use any simulation software: commercial, open Source or in-house.

Perfect integration

XCS is natively available with Bull hardware architecture and can be just as easily deployed on any Linux-based infrastructure.

XCS is a non-intrusive solution integrated with your applications, your existing technical environments, and your company processes:

- ▶ Connect XCS to your company's corporate directory service: LDAP, NIS or Active Directory
- ▶ Connect XCS to most job schedulers:

SLURM, Oracle Grid Engine, PBS Pro, IBM LSF, OAR

- ▶ Connect XCS to most remote visualization technologies
- ▶ Customize or rebrand XCS to match your visual identity
- ▶ Focus on your core business by relying on our HPC experts: turnkey services available
- ▶ Start small, and pay as you grow.

Remote data visualization

Simulation creates huge datasets, which cannot be easily downloaded to the user's desktop for visualization. XCS, coupled with remote visualization technology, allows users to access their remote data interactively by sharing visualization resources:

- ▶ Integration with most existing 3D visualization technologies
- ▶ Best user experience with exclusive Bull extreme factory remote visualizer (XRV) technology for near-local user experience
- ▶ Lower costs by sharing graphical resources between multiple users
- ▶ Advanced calendar-based reservation of exclusive access to visualization resources
- ▶ Reduced visualization software license and workstation costs by mutualizing applications.

XCS software components

The XCS portal includes the 4 software components described below.

- ▶ XCS UI: the user interface application, as viewed in the web browser.
- ▶ XCS API: the HTTP RESTful API specification (REST=Representational State Transfer) that allows normalized and stateless communications between the XCS UI and the XCS engine.
- ▶ XCS engine: java implementation of XCS API with embedded http/https server. It contains all of the business logic (jobs, applications, projects, accounting, etc.) and is responsible for all communications with the system (file systems, directory services, etc.).
- ▶ XCS integration layer: this is the abstraction layer used by the XCS engine to be compatible with different batch schedulers, remote visualization technologies, etc. It includes a framework to easily integrate HPC applications and license servers.

You can implement your own custom front-end if you want. Your custom front-end piece of software should just be able to make XCS API calls like the XCS UI does (e.g. a bash script with curl commands or a Delphi program with Indy.sockets calls).

Related services

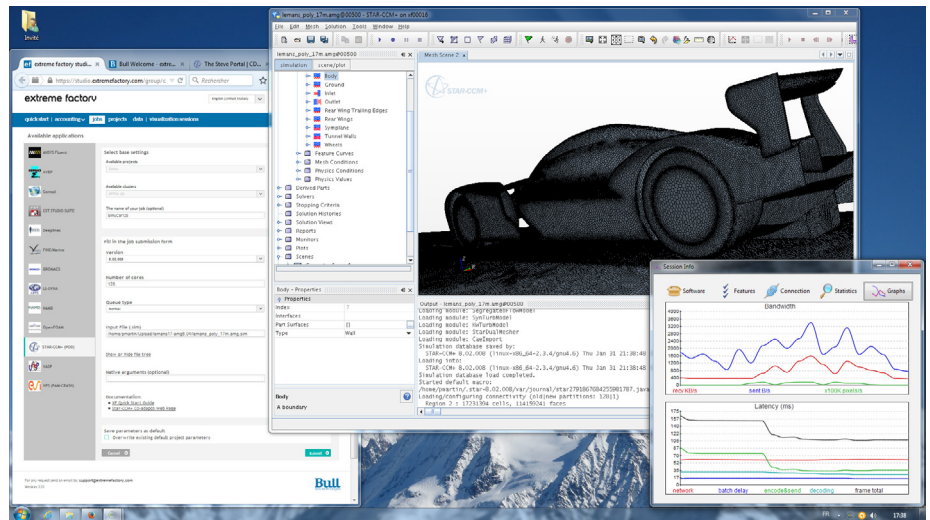
Our experts can configure extreme factory computing studio to fit your internal environment: job schedulers, file servers, enterprise directory service and security policies.

We can help you to integrate all your applications within extreme factory computing studio, so that users can access them through easy-to-use interactive web forms.

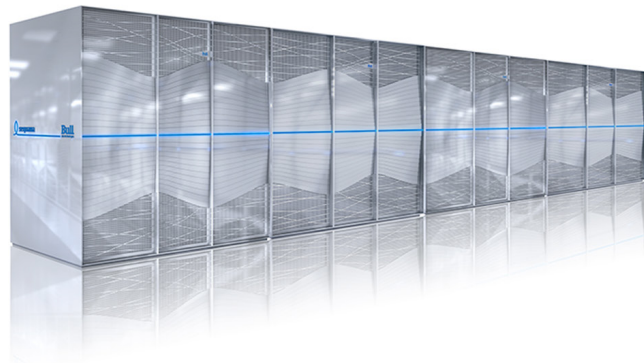
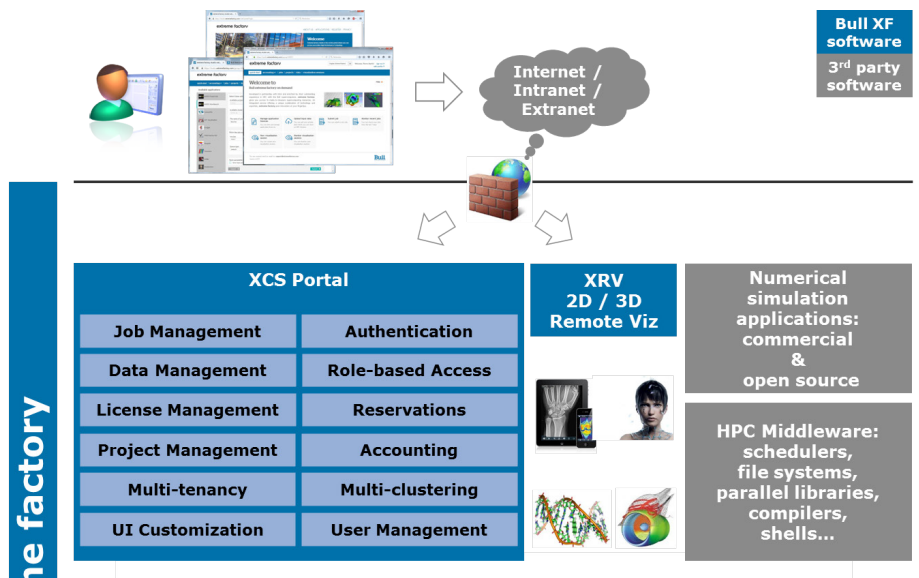
We can define and then implement for you the best HPC-as-a-Service solution for your needs. Based on their experience, our experts can recommend all necessary components: hardware infrastructure, HPC middleware, security mechanisms, High Availability, etc.

The look-and-feel of the XCS portal can be fully customized and rebranded to match the visual identity of your organization.

User experience with XCS



extreme factory architecture



For more information,
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