

## extreme factory remote visualizer



### Remote 3D visualization

Terabyte-size data sets are becoming more common as scientists and engineers gain access to ever increasing computational resources.

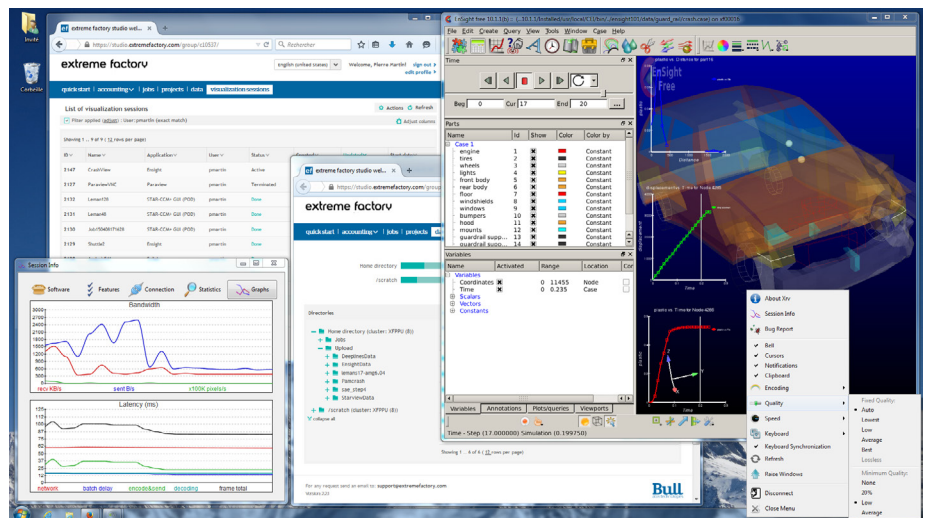
Interactively exploring these data sets can be a very challenging task, particularly for users whose primary access to visualization resources is a modest desktop workstation.

Remote visualization is the means to overcome the computing data transfer issue: it is neither advisable nor feasible to transfer the huge quantity of data produced by HPC resources. Remote visualization also reinforces intellectual property protection by avoiding actual data transfer - only pixels are transferred. This is especially important when you have external contributors, such as sub-contractors, partners, trainees.

Remote visualization makes it possible to consolidate all 3D viewing applications in the data center, as opposed to distributed on a number of high-end workstations.

extreme factory remote visualizer is the Bull client-server 3D streaming technology. This extremely fast technology makes it simple for users to interact with their 3D applications remotely, whatever they are (HPC pre-/post-processing, CAD, rendering...), on Windows or Linux.

Thanks to state-of-the-art compression technologies, interaction with extreme factory remains fluid even on slow Internet connections.



## Key features

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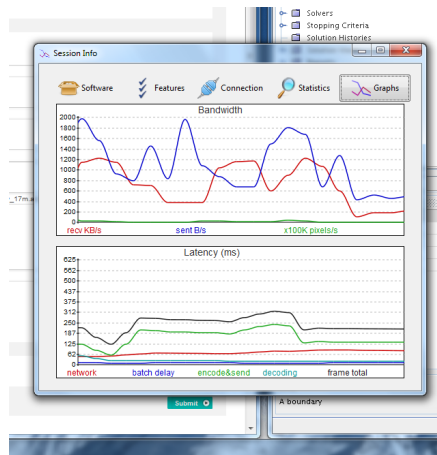
- ▶ Several sessions can be mapped on a single GPU (10 or more).
- ▶ The server streams the pixels of running application towards the client, which displays them and sends back keyboard and mouse input to the server.
- ▶ Client software is available on any x86 computer running Microsoft Windows XP, Windows 7, RedHat 6 derivatives, and Mac OS X. Other Linux distributions are available upon request.
- ▶ Server software is available for RedHat 6 and derivatives. Other Linux flavors may be made available upon request.
- ▶ Seamless mode makes windows provided by XRV appear as local, with your desktop decorations.
- ▶ XRV is independent from client screen resolution, making it dynamically fit any screen or window size.
- ▶ Session broker plugins are available for the main HPC job schedulers (SLURM, Grid Engine, IBM LSF, Altair PBS Pro, OAR...).
- ▶ Session sharing

**XRV makes it possible to consolidate graphics resources by sharing GPUs between several users, without necessarily using virtualization. The approach used is API intercept, which is suited both to bare metal environments and to virtual environments (PCI pass-through mode and vGPU mode).**

## Advanced compression and heuristics

Advanced compression and heuristics make XRV the fastest technology on the market as of today.

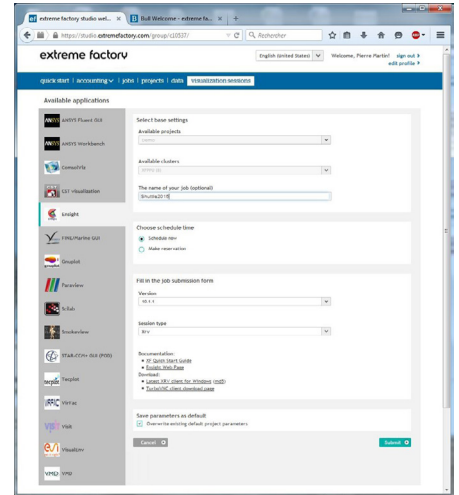
- ▶ Video compression based on advanced algorithms, requiring little bandwidth (3Mbit/s for comfortable work at 1280x1024)
- ▶ Real time session bandwidth and latency monitor



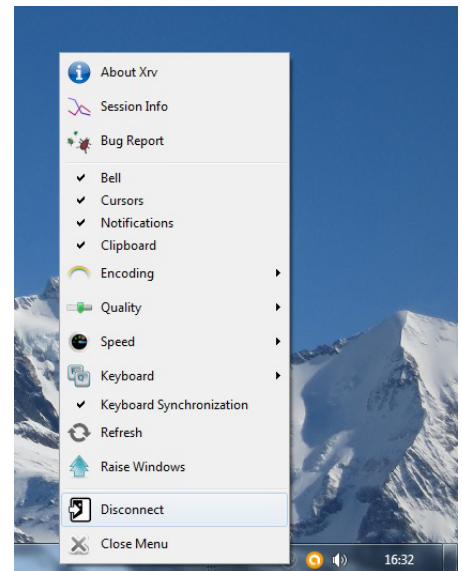
- ▶ Powerful heuristics to automatically adjust image quality based on measured network latency, dynamically lowering image quality to provide more reactivity when needed, and doing high quality screen refreshes when the image stops moving
- ▶ Data stream ciphered through SSH tunnel. Other crypto algorithms can be studied upon demand
- ▶ Session authentication through one-time-password, systematically ciphered
- ▶ XRV consumes less bandwidth, has equivalent or better latency, has better ergonomics thanks to seamless mode and resolution independence

## Interoperable with XCS

XRV is fully integrated with our optional XCS web portal (extreme factory computing studio).



## XRV settings menu



For more information,  
Please contact [hpc@atos.net](mailto:hpc@atos.net)

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