Contribution ID: **427** Contribution code: **WED 15**   Type: **Poster**

Development of a WebRTC-Based Remote Desktop for Neutron Scattering Data Analysis on Openstack

Wednesday 23 October 2024 16:00 (15 minutes)

In neutron scattering experiments, the complexity of data analysis and the demand for computational resources have significantly increased. To address these challenges, we have developed a remote desktop system for neutron scattering data analysis based on the Openstack platform. This system leverages WebRTC technology to build a push-pull streaming service system, which includes the development of modules for screen capture, stream transmission, and GPU-based screen rendering. By integrating and optimizing these technical modules, we have realized an interactive web-based remote desktop tailored for neutron scattering users.

Firstly, we set up a virtualized environment on Openstack to provide flexible resource management and high availability. Utilizing WebRTC technology, we achieved efficient screen capture and transmission, ensuring real-time and smooth remote desktop operations. Furthermore, the GPU-based screen rendering module significantly enhances the performance of image processing and display, meeting the high computational demands of neutron scattering data analysis.

The final implementation of this system not only provides an efficient, interactive remote data analysis platform but also significantly improves the efficiency of neutron scattering data analysis. Users can perform real-time data processing and analysis through a web interface without the need for local high-performance computing devices. This innovative solution offers new possibilities for neutron scattering data analysis and lays a solid foundation for future scientific research.

Primary author: LIYK, 李亚康

Presenter: LIYK, 李亚康

Session Classification: Poster session

Track Classification: Track 9 - Analysis facilities and interactive computing