



Contribution ID: 73

Type: **not specified**

CSNS Computing Environment Based on OpenStack

Friday, October 21, 2016 11:35 AM (25 minutes)

OpenStack is an open source software for creating private and public clouds. It controls large pools of compute, storage, and networking resources throughout a datacenter, managed through a dashboard or via the OpenStack API. Hundreds of the world's largest brands rely on OpenStack to run their businesses every day, reducing costs and helping them move faster.

We are applying this computing mode to the China Spallation Neutron Source (CSNS) computing environment. So from the research and practice aspects, firstly, the application status of cloud computing science in High Energy Physics Experiments and the special requirements of CSNS are introduced in this paper. Secondly, our design and practice of cloud computing platform based on OpenStack are mainly demonstrated from the aspects of cloud computing system framework, some improvements to OpenStack network, Storage architecture and so on. Finally, some future prospects of CSNS cloud computing environment are discussed in the ending of this paper.

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Session Classification: Grid, Cloud and Virtualisation

Track Classification: Grid, Cloud & Virtualisation