

Simulation approach for improving the computing network topology and performance of the China IHEP Data Center

Tuesday, July 10, 2018 4:40 PM (20 minutes)

The goal of the project is to improve the computing network topology and performance of the China IHEP Data Center taking into account growing numbers of hosts, experiments and computing resources. The analysis of the computing performance of the IHEP Data Center in order to optimize its distributed data processing system is a really hard problem due to the great scale and complexity of shared computing and storage resources between various HEP experiments. In order to fulfil the requirements, we adopt the simulation program SymSim developed in IT lab of the Joint Institute of Nuclear Research [1]. This simulation system is focused on improving the efficiency of the grid/cloud structures development by using the work quality indicators of some real system. SymSim facilitates making a decision regarding required equipment and resources. The simulation uses input parameters from the data base of the IHEP computing infrastructure, besides we use some data of the BESIII [2] experiments to indicate workflow and data flow parameters for simulation two different variants of organizing IHEP computing infrastructure. The first simulation results show that the proposed approach allows us to make an optimal choice of the network topology improving its performance and saving resources.

References

1. Korenkov V. V., Nechaevskiy A. V., Ososkov G. A., Pryahina D. I., Trofomov V. V., Uzhinskiy A. V., Simulation concept of NICA-MPD-SPD Tier0-Tier1 computing facilities // Particles and Nuclei Letters. —2016. —Vol. 13, No 5. —P. 1074–1083.
2. BESIII Experiment [Electronic resource]: <http://bes3.ihep.ac.cn/>

Primary authors: Ms WANG, Li (IHEP); NECHAEVSKIY, Andrey (JINR); QI, Fazhi (Chinese Academy of Sciences (CN)); Prof. OSOSKOV, Gennady (Joint Institute for Nuclear Research (JINR), Russia)

Presenter: NECHAEVSKIY, Andrey (JINR)

Session Classification: Posters

Track Classification: Track 8 –Networks and facilities