Contribution ID: **51**   Type: **not specified**

Data Center Simulation for the BM@N experiment of the NICA Project

Thursday, 8 July 2021 14:45 (15 minutes)

One of the uppermost tasks in creating a computing system of the NICA complex is to model centers of storing and processing data that come from experimental setups of the complex, in particular, the BM@N detector, or are generated using special software for checking of the developed data processing algorithms and for comparison with the expected physical result.

After reviewing the existing software tools for data center simulation, a new approach was chosen to solve the problem. The approach is based on the representation of information processes as byte streams and the use of probability distributions of significant data acquisition processes; in particular, the probabilities of losses of incoming information for different configurations of the data center equipment are to be defined.

The current status of the work and the first results of modeling centers for processing and storing data of the BM@N experiment of the NICA complex for the next run are presented.

Summary

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Session Classification: Research infrastructure

Track Classification: 2. Research infrastructure