

ABSTRACT

for the graduate work of Kucher Vladislav Olegovyth
on the point: “Scheduler of task with large data amounts and minimal time to file
transfer for NorduGrid”

This work is devoted to NorduGrid scheduler development.

The algorithm and the software implementation of scheduling the tasks with large amounts of data and minimal time to file transfer for NorduGrid are elaborated. The tools to accomplish the given task is reasonably chosen in view of the system specific features. The experimental testing of the developed subsystem has been conducted for middleware ARCNOX. The results have shown its efficiency for the given task and the possibility to include the developed subsystem in the future releases of the ARCNOX.

Application of the fuzzy-set approach, the principle of square stowage into the band of a given width, choice of an aggregate system as a mathematical model of the investigated object, have allowed the development of an algorithm of scheduling the user task performance. Such an approach minimizes the time of task performance as well as balances workload of the resource suppliers. The results of the work have been presented at the International Conference "SAIT-2011".

Total work volume 108 pages, 10 illustrations, 3 tables, 38 bibliographic titles, appendix volume 6 pages.

Keywords: Grid-system, middleware, NorduGrid ARC, KnowARC, task management system, the scheduling algorithm, software implementation, membership function, square stowage, mathematical model.