



Contribution ID: 103

Type: Sectional reports

Processing of Multidimensional Data in Distributed Systems for Solving the Task of Tsunami Waves Modeling

Thursday, 7 July 2016 14:30 (15 minutes)

Many applied research of geography and oceanology require big data processing. One of these problems it is tsunami waves modeling. This task involves dynamic re-interpolation of bathymetry data on multiple grids of different scales. It is determined by the distance from the coastline and existence of islands along the front of wave. In this work re-interpolation is implemented by applying parallel programming primitives to multidimensional arrays of data, which are distributed across the computer cluster nodes. It allows to work effectively with data that does not fit into the memory of one compute node. In addition to this, it improves processing speed compared to the sequential program. NetCDF format that use for storage bathymetry data it is hierarchical format and he hasn't ready-made solutions for processing in distributed systems. Paper views alternative solutions and use one of these for solve given task.

Primary author: Mrs SVESHNIKOVA, Svetlana (Saint Petersburg State University)

Presenter: Mrs SVESHNIKOVA, Svetlana (Saint Petersburg State University)

Session Classification: 10. Databases, Distributed Storage systems, Big data Analytics

Track Classification: 4. Scientific, industry and business applications in distributed computing systems