

Theme: New Computing

- Sub theme: Rack-Scale Computing

The scale of the cloud infrastructure is ever-increasing to support applications, which require more computing resources beyond a single machine to process their demanding workload in a timely manner. A rack is the promising building block of the data centers because it efficiently offers the applications with scalable computing resources such as thousands of computing cores, terabytes of memory, and petabytes of storage, based on their needs.

The rack-scale computing, however, raises new research questions when it comes to resource management, inter-server job scheduling, interconnect, network stack, and so on. Therefore, we are seeking novel research projects that can propose new design principles for computing, storage, and network under the rack-scale environment. The topics we pursue through this GRO are as follows:

- Disaggregated storage system with RDMA-based interconnect nodes
- RDMA-based distributed platforms and their programming models
- Energy-efficient inter-server job scheduling
- Heterogeneous resource managements (H/W accelerators)
- Scale-out memory architecture

※ *The topics are not limited to the above examples and the participants are encouraged to propose the original idea.*

※ *Funding: Up to USD 150,000 per year*