

# High-performance computation is available by cloud computing

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Hi-IaaS prototype. Credit: Osaka University

A group of researchers led by Visiting Professor Takashi Yoshikawa developed the world's first system for flexibly providing high-performance computation by cloud computing.

Conventional systems for providing high-performance computation by cloud computing was performed by a special server in a fixed configuration, which had a problem of high cost and poor utilization efficiency. The system developed by this group can provide a computing system capable of handling requests from a user (jobs) by controlling numerous ordinary servers, enhancing work efficiency. By using management software, this computer system can change not only system components such as the number of servers, network connection, and data storage, but also hardware such as Graphics Processing Units (GPU) and Solid State Drives (SSD).

In addition, this group developed a job-resource integrated management system that can change system components according to the nature of a job as well as functions and performance necessary for running a computation job. This has made it possible to provide a computation resource by building a computation system appropriate for user requests by job and efficiently execute the job by reducing wait time of the whole job on queue in cloud computing. This system allows anyone to start analysis of IoT (Internet of Things) data and Big Data and scientific computation in a [cloud computing](#) environment.

Currently, the use of high-level [computation](#) in the fields of science and engineering is on the rise and it is hoped that this group's achievements will expand the horizon of the usage of and promote sophistication of the system.

The operation of this system was demonstrated at Super Computing 16 which was held in Salt Lake City, Utah, USA from November 13 through November 18, 2016.

Provided by Osaka University

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