# JLDG: Japan Lattice Data Grid

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JLDG is a data-grid infrastructure for Lattice QCD (LQCD) community in Japan. Several large LQCD collaborations in Japan have been working on QCD simulations using supercomputers. Outputs of simulations called "QCD configurations" are valuable, because physicists can study various aspects of QCD using these configurations. JLDG enables the community to share configurations and other data distributed over distant sites. File sharing is realized with Gfarm global file system. GSI authentication is managed by VOMS. JLDG utilizes the NII Super SINET MPLS VPN, HEPnet-J/sc, as a hardware infrastructure. Part of configurations can be accessed from all over the world through the ILDG interface. Full installation of the system was completed in FY2006. Mutual test operations are on-going. ***http://www.jldg.org***
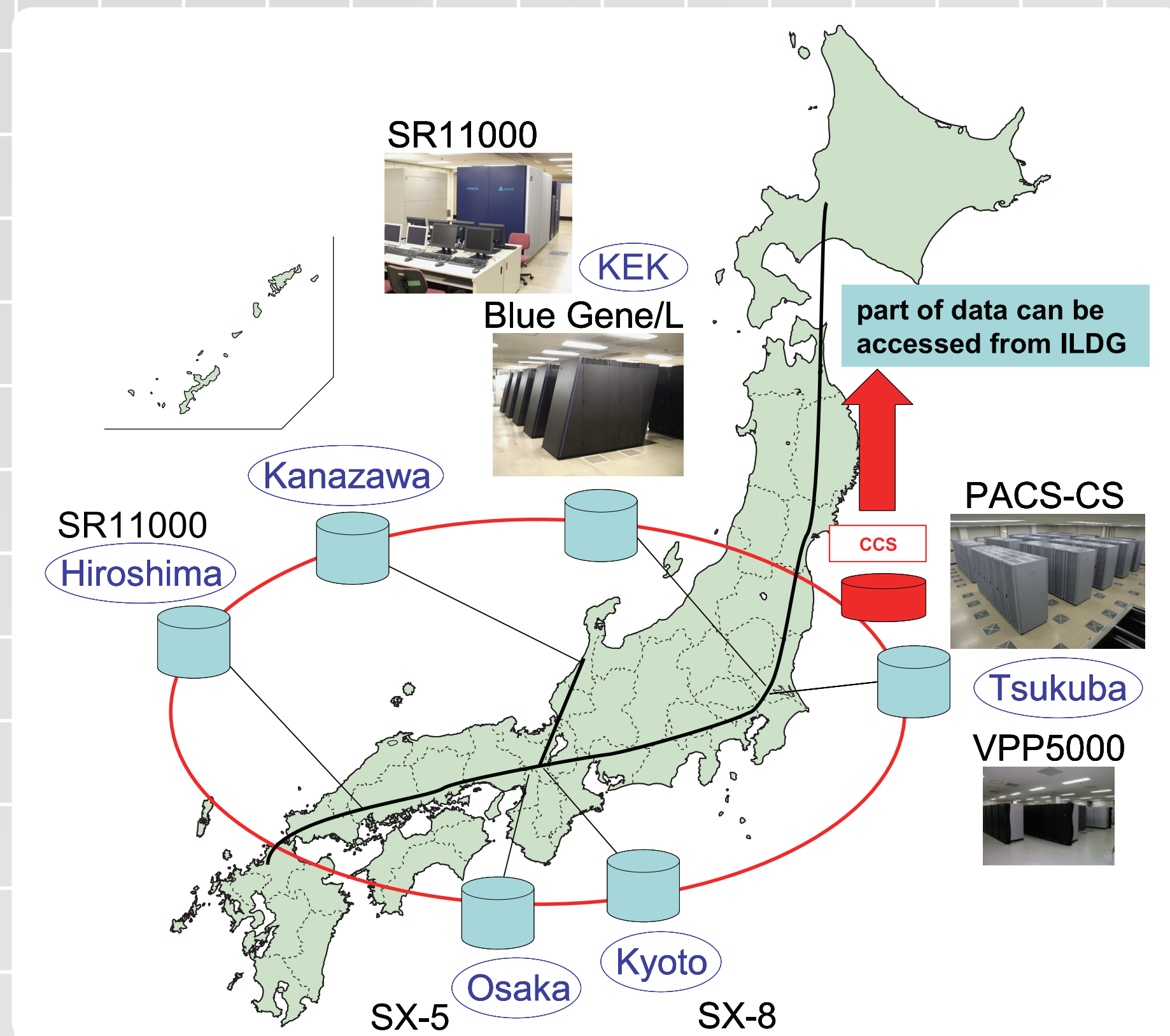
ILDG: International Lattice Data Grid

ILDG is an international project to develop a grid of datagrids for sharing lattice QCD configurations world-wide. An XML-based markup language, QCDml, describes metadata for QCD configurations and ensembles (sets of configurations with common physics parameters). Middleware interface among collaborating grids is defined with WSDL. Construction of regional grids was finalized in US, UK, Germany, Australia and Japan (JLDG works as the ILDG Japan grid). Interoperability of the regional grids has been achieved for download operations and valuable configurations have already been archived in the grid. ***http://www.lqcd.org/ildg***

metadata-data cooperation

LQA: Lattice QCD Archive

LQA is a database of QCD configurations provided and maintained by the Center for Computational Sciences (CCS) since Dec. 2003. The Archive currently stores i) two-flavor full QCD configurations generated by the CP-PACS parallel computer at CCS (about 8000 files stored in 1.5 TB disk space) and ii) 2+1 flavor full QCD configurations generated by the CP-PACS and JLQCD collaborations (about 21000 files stored in 6 TB disk space) and makes them available to lattice QCD community world-wide. Configurations for much lighter quarks, which will be generated with the PACS-CS computer, will be added to the Archive. One can use the ILDG standard interface to search ensembles and configurations and to download configurations, or use an interactive Web interface. The LQA was designed to serve as a Japan gateway to/from the other sites of ILDG. The system will be restructured as a gateway between JLDG and ILDG in 2007. ***http://www.jldg.org/lqa/index.html***

Middleware Components