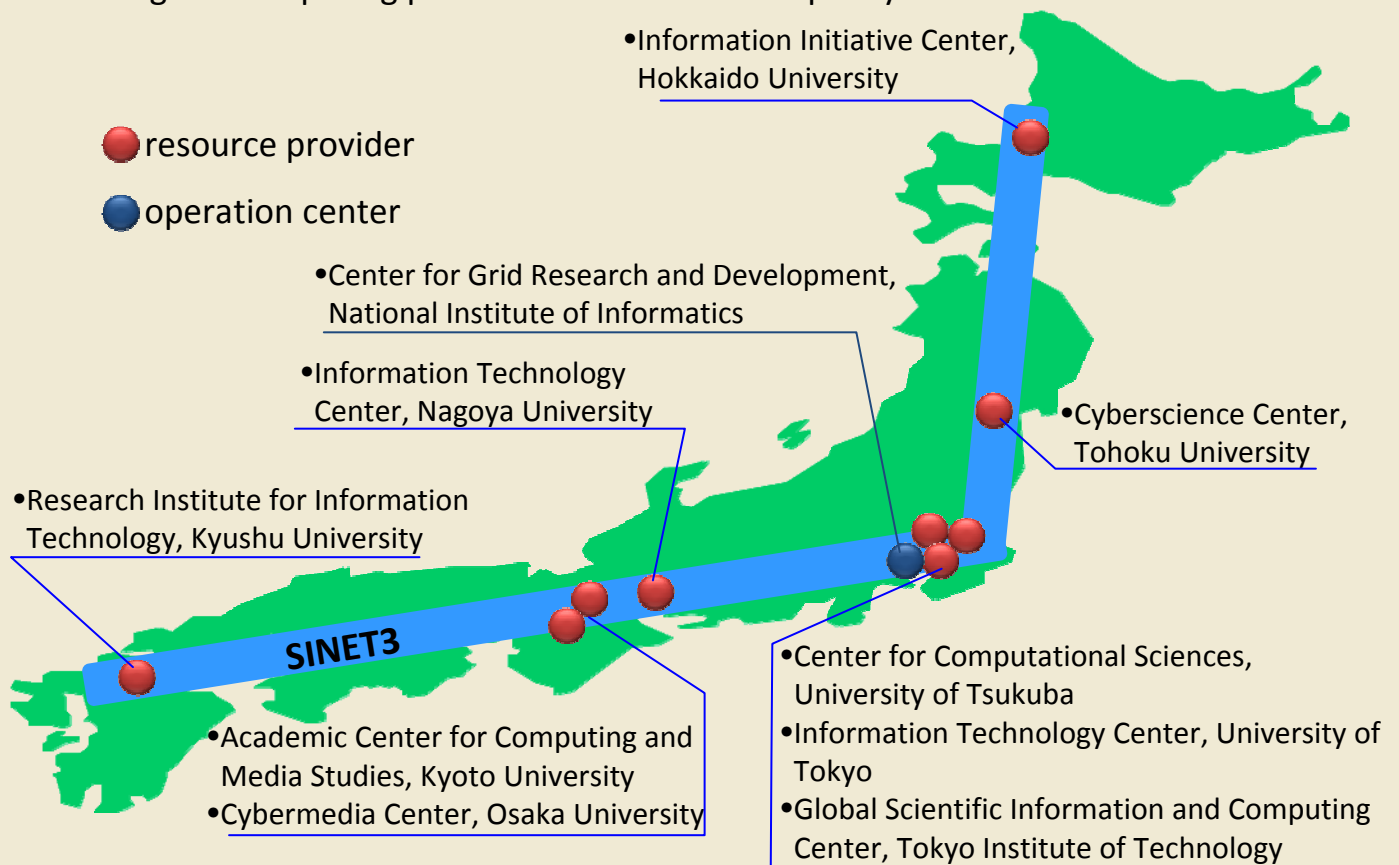# Academic Grid Infrastructure in Japan

■Overview

Computer centers at nine universities and National Institute of Informatics (NII) started pilot operation of an academic grid infrastructure in Japan. The computer centers play as resource providers offering their high-performance computer systems, and NII plays as an operation center (a helpdesk, VO hosting and a certificate authority) to coordinate grid operation collaborating with the computer centers. SINET3 is used to link high-performance computing systems in the computer centers. Researchers can run their scientific applications on the academic grid infrastructure utilizing the computing power and the network capacity.

- •Information Initiative Center, Hokkaido University

● resource provider

● operation center

- •Center for Grid Research and Development, National Institute of Informatics
- •Information Technology Center, Nagoya University
- •Cyberscience Center, Tohoku University
- •Research Institute for Information Technology, Kyushu University

SINET3

- •Academic Center for Computing and Media Studies, Kyoto University
- •Cybermedia Center, Osaka University
- •Center for Computational Sciences, University of Tsukuba
- •Information Technology Center, University of Tokyo
- •Global Scientific Information and Computing Center, Tokyo Institute of Technology
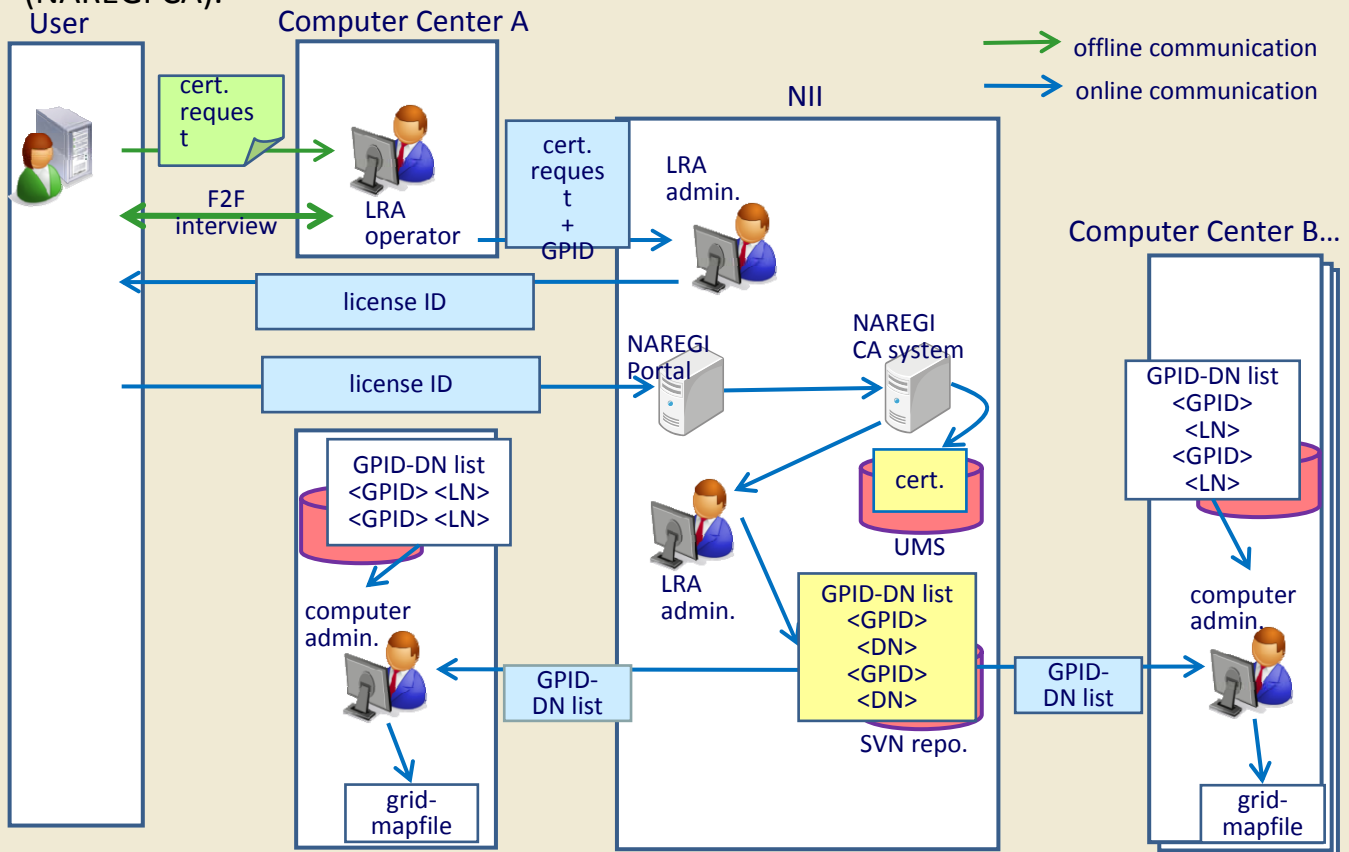
■Grid Middleware

The NAREGI middleware integrates widely distributed computing and storage resources in the grid infrastructure as a virtualized single computing environment. The NAREGI middleware is developed as open source software and available at http://middleware.naregi.org/Download/.

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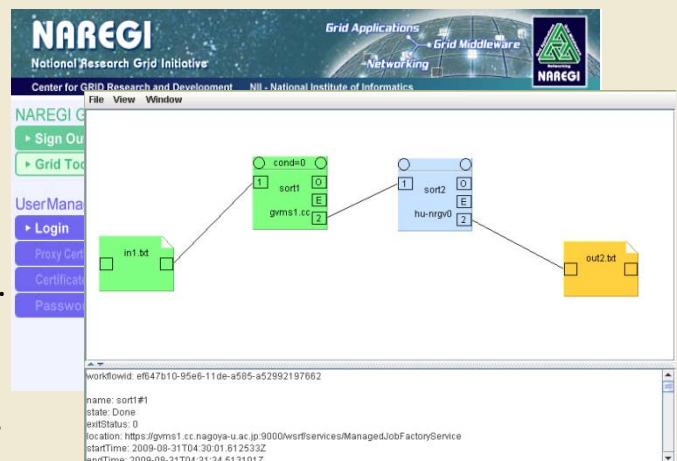
Academic Grid Infrastructure in Japan

■User Management

User Management is one of issues in grid operation. Computer centers have their own policies for user registration. PKI is now de facto standard of the user authorization method on the grid. User registration on the grid infrastructure is complicated and forces the user tedious procedures, i.e. the user needs to submit multiple application forms for accounts to multiple computer centers and apply the grid user certificate to a grid certificate authority (CA). Computer centers and NII collaborate to simplify the user registration process on the academic grid infrastructure. The user submits one application form for "the grid pack", a set of accounts of computer centers and a grid user certificate. Then, the user accounts are created in computer centers and the grid user certificate is issued from CA in NII (NAREGI CA).

User

Computer Center A

cert. request

F2F interview

LRA operator

cert. request + GPID

NII

LRA admin.

offline communication

online communication

license ID

license ID

Computer Center B...

GPID-DN list
<GPID>
<LN>
<GPID>
<LN>

NAREGI Portal

NAREGI CA system

cert.

UMS

GPID-DN list
<GPID> <LN>
<GPID> <LN>

computer admin.

grid-mapfile

LRA admin.

GPID-DN list

GPID-DN list
<GPID>
<DN>
<GPID>
<DN>

SVN repo.

GPID-DN list

computer admin.

grid-mapfile

A procedure for issuing a user certificate and creating grid-mapfile

■More Information: http://www.naregi.org/

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