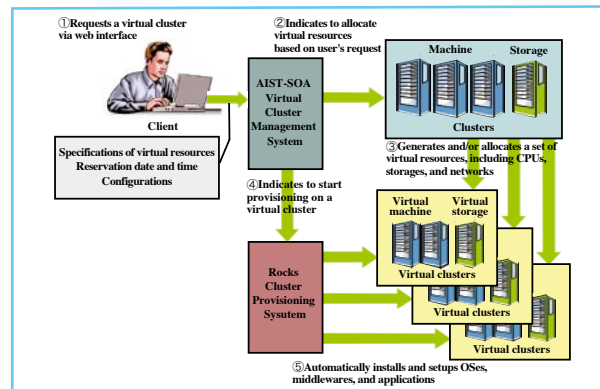


Development of "AIST-SOA Virtual Cluster Management System"

Since 2005, we have been developing "AIST-SOA Virtual Cluster Management System", which fosters utility computing on commercial data centers by employing virtualization technology. The system allows clients to reserve and configure a virtual cluster through an easy-to-use web interface. For each reservation, the system automatically allocates a bunch of virtualized computing resources including Xen/VMware based virtual CPUs, iSCSI storages, and networks for a virtual cluster, and installs and configures operating systems and applications by using Rocks, a cluster provisioning system. A prototype system has already been running, and we are now conducting research to improve stability and extensibility of the system. We also plan to apply our system to actual data centers.



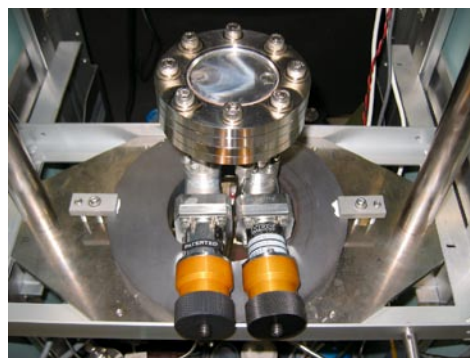
Scheme of AIST-SOA Virtual Cluster Management System.

Hiroataka Ogawa
Grid Technology
Research Center
h-ogawa@aist.go.jp

AIST TODAY Vol.7, No.5
p.17 (2007)

Device for highly-efficient generation of hyperpolarized xenon gas to improve MRI sensitivity

Our research group has succeeded in building a continuous-flow device that generates hyperpolarized xenon gas with a high efficiency and in developing the device into a commercialized, compact, automated high-performance system. The new device is a result of efforts to increase the level of sophistication of a continuous-flow system for the generation of hyperpolarized xenon gas in nuclear magnetic resonance (NMR) for medical use. In addition to being smaller in size, the device can be connected directly to an NMR apparatus by using simple capillaries. It is expected to be useful in the analysis of pore structures of nanoporous materials such as those used in fuel cells, and in medical diagnosis technology using sensitive magnetic resonance imaging (MRI) system.



Novel continuous-flow device for generating hyperpolarized xenon gas.

Mineyuki Hattori
Photonics Research Institute
mineyuki.hattori@aist.go.jp

AIST TODAY Vol.7, No.6
p.32 (2007)