AIST SOA for Building Service Oriented e-Infrastructure

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Abstract

The Grid technologies have brought us a set of new concepts such as utility computing, service on-demand, and resource sharing in the business scene as well as many examples of new modes of science. Although for limited applications grids are able to provide production quality of services today, we are still looking for enablers to apply them to a much broader area of use cases. Populating the Internet for personal and business use, it is to say that the Internet technology changes our personal life and business environment in terms of our work style like SOHO, accelerating business speed by easy communication and handy tools, globalization dismissing geographical boundaries and professional borders. However achieving such flexibility and speed in the business, current monolithic IT infrastructure never meets the demand of high agility in business. We take the service oriented architecture (SOA) as one of the key technologies to bridge the gap, but without considering computing resources, SOA will not become a feasible solution. Co-designing SOA for a flexible service building model and IT utility model of pay-per-use to save TCO, it is the perfect match to produce a future IT infrastructure, that is to say “e-Infrastructure.”

There is a strong demand on IT infrastructure for a small and medium organization or individuals to strengthen compositeness against major IT vendors. But they would not accept the higher cost in developing and installing such an SOA-like large scale software package. The AIST SOA is a project to develop yet another software package to have a similar capability of SOA but easy deployment so as to lower the bar for them. More technically, AIST SOA intends to provide a middleware package to create a sort of virtual data center (VDC) which is a virtual organization (VO) consisting of internet data center (iDC) based on the SOA concept. The VDC provides a single resource service interface infrastructure as if it is a BIG and SCALABLE data center to perform services, however, AIST SOA does NOT intend to develop competitive software with major IT vendors’ so called “SOA.”

In this talk, we would like to describe the AIST SOA concept and design, and current project status of its development.

Biodata

Satoshi Sekiguchi joined Electrotechnical Laboratory, Agency of Industrial Science and Technology in 1984, and is the founding director of Grid Technology Research Center (GTRC), AIST since 2002. He is a member of IEEE, SIAM, IPSJ, and is a chair of the SIGHPC. He has served as a steering committee member of the Global Grid Forum (GGF) till 2003, and is now a member of the GGF advisory committee. He has been one of the technology and community leaders, in particular one of the PIs of the Ninf project since 1995, the founder of the Asia Pacific Grid partnership (ApGrid), National Research Grid Initiative (NAREGI), and chair of Japan Grid Consortium (JpGrid).