

Secure and Reliable Sharing of User Attributes among Websites—Information Sharing Control Technology Enabled by the Latest Liberty Alliance Specifications

NTT has developed a new system for secure and reliable sharing of user-attributes among websites, providing a new information-sharing platform for Internet services. The two main features of the system are as follows.

1. The system is one of the world's first applications of the Phase 2 Specifications of the Liberty Alliance Project¹. The Liberty Alliance is developing open standards for federated² network-identity management and identity-based services.
2. The end-user has flexible control of the conditions for sharing user-attributes among websites. This prevents the leakage of private information against the user's wishes.

The system provides a platform for creating new business models for the Internet and should find application in various fields.

Background

Internet services such as online shopping are now providing more personalized services through user authentication and utilization of user-attributes such as names or addresses. Sharing user-attributes among websites is an effective tool in providing personalized services; it requires both interoperable standards and security for private information. For this purpose,

¹ Liberty Alliance Project (<http://www.projectliberty.org/>) was formed in September 2001 to serve as the premier open-standards organization for federated identity and identity-based services. The Alliance is delivering specifications and guidelines for a complete network identity infrastructure that will resolve many of the technological and commercial issues hindering the deployment of identity-based web services. Alliance members include major service providers, vendors, and carriers from North America, Europe, and Japan.

² Federation refers to an association of some set of service providers and identification providers. Federating means the binding of providers as network entities.

NTT has implemented the latest open standards from the Liberty Alliance Project (Phase 2 Specifications) along with a sharing-policy control mechanism developed in house, to provide improved privacy protection in the sharing of user information among websites.

The Phase 1 Liberty Alliance Specifications are for the Identity Federation Framework, which enables "simplified sign-on". With Liberty-enabled simplified sign on, users are given access to websites in a "circle of trust" after a single successful authentication of the user at the first site. This frees users from having to enter passwords every time they access secure websites. More than 20 products and services enabled by the Liberty Alliance Phase 1 Specifications are now on the market.

The Phase 2 Specifications define an Identity Web Services Framework, which enables the sharing of user-attributes between federated websites based on per-user-defined permission. NTT's system is one of the first in the world to utilize the Phase 2 Specifications.

Technical points

In addition to the single-sign-on user authentication and user-attribute sharing among websites defined by the Liberty Alliance, NTT provides a new method for securely sharing user-attributes in which end-users can configure the sharing policy for their own private information. For example, users might want to provide only their names to music sites but they must give out addresses to online shopping sites in order to receive delivery. Below is an outline of the system's main features.

1. Sharing of user attributes among federated entities on the Internet.

The Phase 2 Specifications from the Liberty Alliance describe the sharing of user attributes by

multiple organizations that hold the attributes. This is achieved through Internet Web-sites that represent the organizations, and frees users from typing attributes such as their names, addresses, and telephone numbers every time they access secure websites. NTT's system can handle Japanese-language data for Japanese web-sites.

2. Privacy Protection

The Phase 2 Specifications describe the sharing of user-attributes according to user-defined permission. Moreover, NTT's new information-resource-sharing method improves privacy protection by ensuring that only the minimum essential information is shared among the organizations.

Future plans

NTT will contribute to further development of the information society by developing techniques for integrating various network services, providing customers with convenient one-stop services. The Phase 3 and later specifications will be aimed more towards service concepts. They will define methods for sharing extended attributes such as users' presence information. This will enable the provision of more strongly individualized services. NTT will continue to contribute as a member of the Liberty Alliance and will energetically promote these specifications in Japan.

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