Development of a System Displaying User's Information Stored in Distributed Information Systems

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Abstract

As a result of improvement of information infrastructure in universities, users with various levels of computer literacy use information systems in dairy activities. Users with low level skill, especially, do not know how to access their individual information, such as quota and mail-forward information, stored in information systems. We report the system supporting users to access their individual information through Web interfaces.

Keywords

User's Information, Authentication, Web interfaces, Log

1 Introduction

Computer literacy becomes a basic one in university education. Educational computer systems are common infrastructure of universities. Almost all freshmen of universities start to use the computer systems just after their entrance to university. The level of computer literacy of university freshmen distributes broadly.

Users of university information systems are required to know their data stored in the system, such as disk quota, mail-forwarding, previous access to the system and so on. Students with low-level computer-skill, however, do not know how to access their individual information stored in university information systems.

Those information, of course, can be accessed by typing some relating commands. Beginners of computer systems, however, can not use terminal modes to type those commands. They need friendly graphical user interfaces to access their information.

We developed the system which enables users to access their individual information stored in the system through web interfaces. This paper discusses the development of the system and reports the implementation in Saga University.

2 Why We Need Web-based Supporting System for Accessing Individual Information.

Current information systems, even for educational use, consist of many distributed computer and network systems. Users use Windows-base or Unix-base terminals. User disk spaces are concentrated to file servers. Total volume of their disk spaces is limited by the quota system in each file server. The mail system sometimes is separately constructed and protected from access by end-users. Users sometimes access the system through other authentication mechanisms.

The total amount of mail-traffic and network accidents increases rapidly. Therefore normal users, even if he/she is a freshman of a university, will eventually face the problem, for example, of disk-quota exceed and pirate of user-id. We need a system which supports users to access their individual information, such as disk-quota, mail-forwarding, previous access history and so on.

Users, especially beginners, do not think necessary to access those individual information. Those information should be displayed without users actions. Namely the system will show the information automatically, for example, in a login process to terminal.

3 The System

The purpose of the system is to provide user's information to users and system operators. The list of the information provided in this system is shown in Fig.1 and Fig.2.

Fig. 1: Information displayed for students

Fig. 2: Information displayed for university staff

Fig. 3: System

The individual information distributed over some systems as shown in Fig.3. The fundamental information about users are stored in a database included in the Integrated Authentication System[1].

Users sometimes forget their passwords or leave them unchanged from the initial value. The initial encrypted password is stored in the database. By comparing a encrypted password in the authentication server with that in the database, the system displays whether the password is changed from the initial value or not. The warning will be displayed if the password is left unchanged from the initial value.

Some users use a mail-forwarding mechanism to other mail servers. By incorrect configuration of .forward file, some users lose their e-mail messages. Our system reads and shows the contents of .forward file.

Our system shows the status of disk use by executing quota commands. It also shows the disk amount of mail-spool, home directory and home directory used for Windows by executing du command.
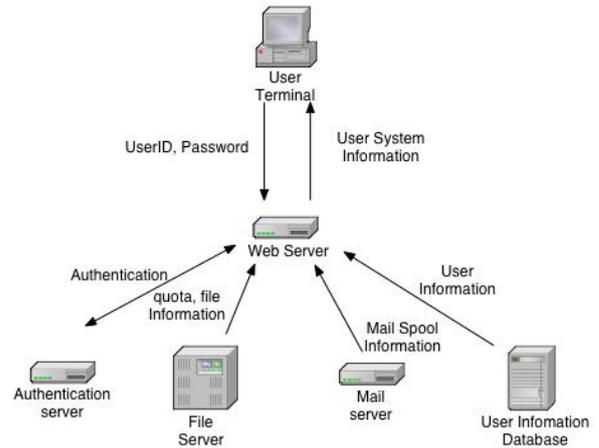
The previous access history to the terminals in educational terminal rooms is also shown by retrieving log files[2].

Users can access their individual information through Web interfaces with user ID and password. The system also provides a GUI for system operators. System operators can access user's information by specifying user ID.

Fig.4 shows the entrance interface to the system for system operators. This interface is displayed only for limited terminals in operators room. The user ID can be typed in or read from students ID cards with magnetic stripe.

Fig. 4: Entrance interface to the system for system operators

4   Summary and discussion

We developed a system displaying user's individual information stored in distributed information systems. It enables beginners of information systems to obtain their present use of system resources. The system also provides user's information for system operators by specifying user ID.

Some users, even freshmen of university, causes file excess. Some are sacrificed by user-ID hacking. Some lose their e-mail by incorrect configuration of mail-forwarding. Our system can provide warning information to such users.

Our system just shows user's information through Web. Many users may not feel necessary to access this system, because they do not know the importance of these information. Therefore we need some mechanisms to show these information automatically. We need lightweight mechanisms to show the information during login process to terminals.

Saga University operates Opengate System, which allows users to connect their own personal computers (PC) to the Internet[3],[4]. To connect a PC to the Internet, the first thing to do is to start a Web browser. It is another chance to show user's information through Web.

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