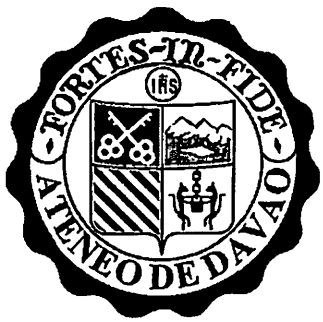
Virtual Drive Sharing via Windows Live Messenger using Virtual Disk API and Sockets



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ABSTRACT

This paper discusses the possibility of a virtual drive-sharing application to be implemented on instant messengers. The idea is to share a virtual hard drive or a VHD file in a client-to-client environment using an everyday communication device – the instant messenger. Different technologies were enumerated and their principles were discussed in detail. This paper narrates, moreover, the technologies and different methodologies that were used and done to successfully implement the virtual drive sharing application. A hashing technique was also applied to add complexity to the application.

Keywords:

<Virtual Drive, Instant Messenger, hashing >

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Since the rise of the information generation, communication has been considered the fundamental approach to information collection. Hence, devices and technologies are created to cater to this need for contact. Telephones, mobile phones, and electronic mails are examples of established technologies that allow for communication. Among the communication-enabling technologies, moreover, instant messengers are most widely used.

Instant messengers give people the privilege to exchange messages in real-time with other people over the Internet. These applications are more preferred by users since these are free and unlimited except of course for the Internet fees for Internet Service Providers. However, this is nothing compared to the payments lost to mobile phone and telephone charges. Moreover, webcam and voice features of instant messengers make it easier for people to exchange complex discussions that Short Message Services (SMS) cannot provide.

Nonetheless, there are more to instant messengers than just enabling communication between and among people all over the world. More features are added to the usual chatting. Photo sharing, for example, is enabled to allow people to share pictures and even save them on their desktop drives. Archives in digital form can also

be sent without the hassle of opening e-mail accounts and attach files. Hence, file sending has become just 'a click away'.

The file sending feature of instant messengers has indeed made life and communication easier, however, people still have to wait for the files to load and be saved onto their drives. Moreover, only single files are processed at a time. Hence, the group considered an easier, hassle-free, and lesser time-consuming access of multiple files.

The group has developed an application that allows for virtual drive sharing on instant messengers. Through the application, "chatters" gain the advantage of accessing the drives of other chatters as though they are local. The main design allows two conversing users on an instant messenger window to be able to share selected drives and files simultaneously and in real-time. Hence, the uploaded drive is accessible by both users regardless of who uploaded them. The users can choose to download and open files through any application that can read them. Hashing capabilities were added, moreover, to allow the application to save files with the same filename but with different content.

Different class libraries built in C# were used to enable connectivity with various instant messenger services.

1.2 Technology Application Context

The present study seeks to answer the general problem:

How can virtual drives be shared through instant messengers?

Specifically, it seeks to answer the following questions:

1. How do virtual drives work?
2. How are virtual drives implemented?
3. How do instant messengers communicate with other instant messengers?
4. What are examples of applications that were successfully integrated with instant messengers?
5. How can virtual drives be integrated on instant messengers?
6. What platform shall be used to design and implement the proposed desktop application?
7. How shall instant messengers allow user chats while integrating with virtual drives?

1.3 Objectives of the Study

The general objective of this research as was discussed upon by the group members prior to project implementation is to provide an easier, hassle-free, and lesser time-consuming access of multiple files on instant messengers.

The specific objectives are:

- To develop an application that shall enable virtual drives to be shared on instant messengers

- To allow access of these drives by users communicating simultaneously as if they are local
- To enable other desktop applications to read these files even when they are not saved onto users' local drives
- To allow for interactive drive sharing
- To enable hashing prior to file saving

1.4 Significance of the Study

Instant messengers are the most commonly used communication resources nowadays. In fact, billions of users are now subscribing to instant messengers. Bountiful features and capabilities make it easier for people to communicate with colleagues, business partners, classmates, relatives and the like over this communication resource. Therefore, the application has addressed and realized the possibility of a wider and more flexible approach to conversations that can affect billions of users around the world.

Moreover, instant messenger users enjoy the applications' capability to send files without the hassle of attaching them over through electronic mails. The project allows users to access not only certain files but drives, as well. Therefore, the application was actually able to provide an easier way of drive access and more enjoyment and satisfaction for the users.

Lastly, no software has yet addressed the possibility of interactive multiple file sharing before the group's application was accomplished. Since virtual drives have multiple files and the application allows for users to view its contents simultaneously, the software has, hence, enabled interactive multiple file sharing.

1.5 Scope and Limitations of the Study

The study generally focused on developing an application that allows for virtual drive sharing on instant messengers. Hence, the project is application-based and was not supplied on the instant messenger. This means that the virtual drives, which were integrated with instant messengers, made use of the files loaded through the group's designed desktop software. Various C# libraries were used to allow for the instant messengers to be able to integrate with virtual drives.

Moreover, it only caters two-party conversations. Hence, conversations between two persons only allow this file exchange. One-to-many data mapping was not catered. Thus, conferences cannot enable the application.

The application only caters virtual drives on VHD formats. This is because the format is already native to Windows 7; therefore, it allows for third-party applications to read the format unnecessary.

Virtual Drive sharing cannot also be established if the VHD format hasn't been loaded yet. The user can either sign in first or set up the VHD environment first but the virtual drive sharing function will be disabled if there's no VHD environment loaded.

The group tested the theory on Windows Live Messenger only. However, since it works on this messenger, this shall, needless to say, possible to all the other remaining messengers. As for the contact list, the user needs to refresh the list if he wants it updated. Moreover, the users' images cannot be displayed in the application because of the limitations of DOTMSN.

Messengers for Mac OS, Linux, Windows, and other operating systems have been developed since all users felt the need for instant messengers. However, the group's mechanism of file virtualization is only native to Windows 7 Home Premium, Professional, and Ultimate Operating Systems. Hence, the application only works on the said operating systems.

1.5 Definition of Terms

Virtual Drive (disk image emulator) – an emulated physical drive that is created either in RAM or on a hard drive

Instant Messaging (IM) – a real-time communication between two or more people over the Internet