



SKYBRIDGE
Breaking the barrier of the Internet

SkyBridge® Proxy DLL

Introduction

IP Australia provisional patent application 2022900275

1 The problems and the opportunity

Working remotely is an inevitable trend only accelerated by the COVID19 pandemic. The use of freelancer programmers in software development has many advantages:

1. Employers only pay for the work done, not superannuation, annual/sick leaves or idle time.
2. Freelancers enjoy the life style in which they are their own bosses.
3. Employers have a much larger pool of international talents than on the local job market.
4. A team can dramatically scale up and down on a weekly basis.
5. Freelancers usually charge much lower and work for longer hours.
6. Employers can leave a rating and review of the freelancer's performance on the freelancer platform such as Upwork. Freelancers thus have a stronger motive to achieve.

However, for freelancers to participate in a software development project, they have to have all source code of all components so that coding tools such as Visual Studio can compile and run.

Some of the components may contain critically important intellectual property, which the software house is not willing to share with a remote freelancer. There are other obstacles, for example, the application being developed needs to access a database that cannot be shared with the freelancers.

If such problems can be solved, then the use of freelancer programmers may see a ten-fold increase, which will fundamentally change how the software industry operates.

2 The SkyBridge® Proxy DLL solution

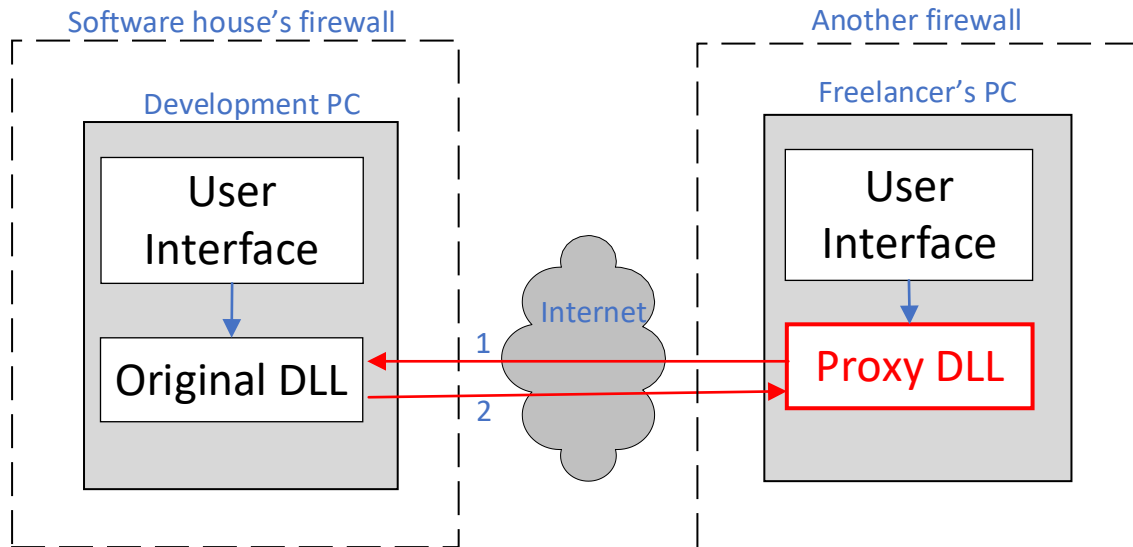
In software, intellectual property is most often contained in dynamically linked libraries (DLL). Our patented SkyBridge® Proxy DLL technology allows a software house to hire remote developers without giving them the DLL which contains critically important intellectual property.

Using our software, a user can generate a **proxy DLL** from any DLL in a few minutes. This proxy DLL has the same public interface (public data types, functions and signatures) as the **original DLL**. Then, the proxy DLL can be given to the remote developers, whose computers may be on a different continent behind a different corporate firewall.

When a function on the proxy DLL is called, it uses SkyBridge® InstantRemoting to forward the request to the original DLL to invoke the eponymous function on the original DLL. The result is returned to the proxy DLL then to the caller of the proxy DLL. The whole round trip across the Internet takes less than a second.

All networking and remoting in this round trip are completely hidden in the proxy DLL. Neither the software house nor the remote developer need any networking/remoting knowledge. In the eyes of the remote developers, what they are given *is* the original DLL.

This round trip is demonstrated in the following diagram. In this example, the freelancer is hired to program the user interface. The DLL contains critically important intellectual property. The arrows in the diagram represents function invocations.



If someone uses a reverse-engineering tool to get the source code of the proxy DLL, he/she will only see the networking code generated by the SkyBridge® Proxy DLL software.

3 An analogy

John (the proxy DLL) knows nothing about stock market, but he has a friend Peter (the original DLL) who is an expert. John goes to a job interview in Wall Street, wearing a spy earpiece which allows Peter to listen remotely. Every question the interviewer asks, Peter answers in the earpiece, John then repeats it. This way, in the eyes of the interviewers, John knows everything about stock exchange.

4 Other applications of our SkyBridge® Proxy DLL technology

Remotely accessing or controlling a device

If you need to download data from a remote computer or device, or control its behavior, just write a DLL and place it in the remote computer or device, which returns the data you want or controls the device. Then, generate a proxy DLL from this DLL, place the proxy on your own computer, and write software to invoke this proxy. The original DLL on the remote computer or device will be instantly called. This way, you achieve instant remote control without writing a single line of networking code.

Offering fine-tuned and customized remote access to your resource

Suppose you want to offer a remote party's software access to your resource such as a database, and you need to apply a fine-tuned and customized control on how it is accessed. You can create a DLL to do this, and place it next to your resource. In this DLL you can apply any complex control and validation. Then you generate a proxy DLL from it and given it to the remote party. This way, calling the functions in this DLL is the only way they can access your resource. No other technology allows you to so easily apply infinitely fine-tuned control on how your resource can be accessed.