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PURDUE
U N I V E R S I T Y

Simulation of Data Transmission in Network Environment

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Background

Last two decades have witnessed the development of Internet. It is deniable that Internet shortened the distance among people. However, the requirement of data transmission various from situations. My study is inspired by the data transmission in the metro system. In such situation, there are two kinds of signals: one is control signal and the other is video signal. For the first one, the amount of data is small, but the accuracy must be guaranteed. For the second one, data loss is allowed, but the transmitting speed must be large enough to ensure video transmission.
My project tries to simulate data transmission which can be further implemented in secure communication situation.
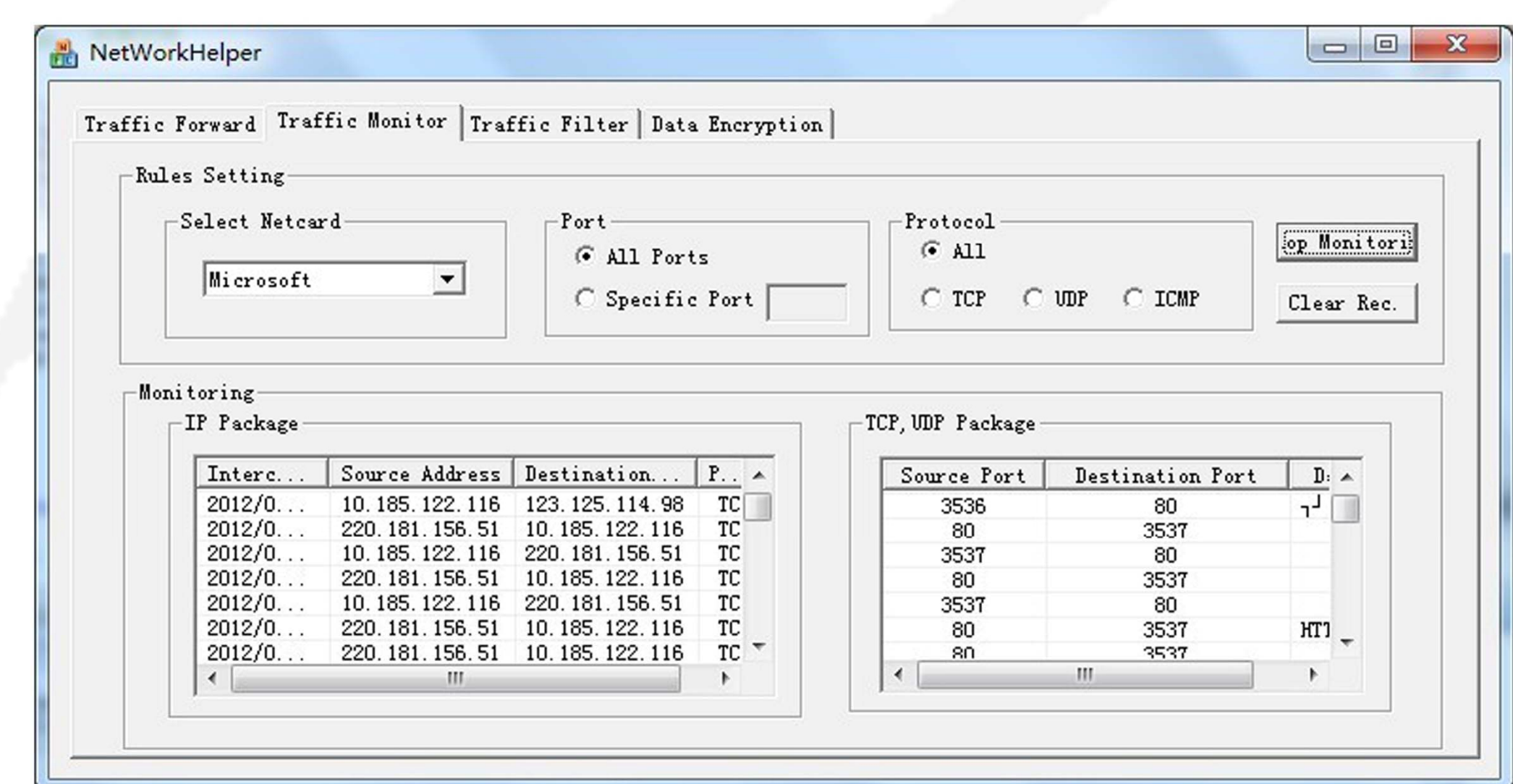

Figure 1: Traffic Monitor

Traffic Forward

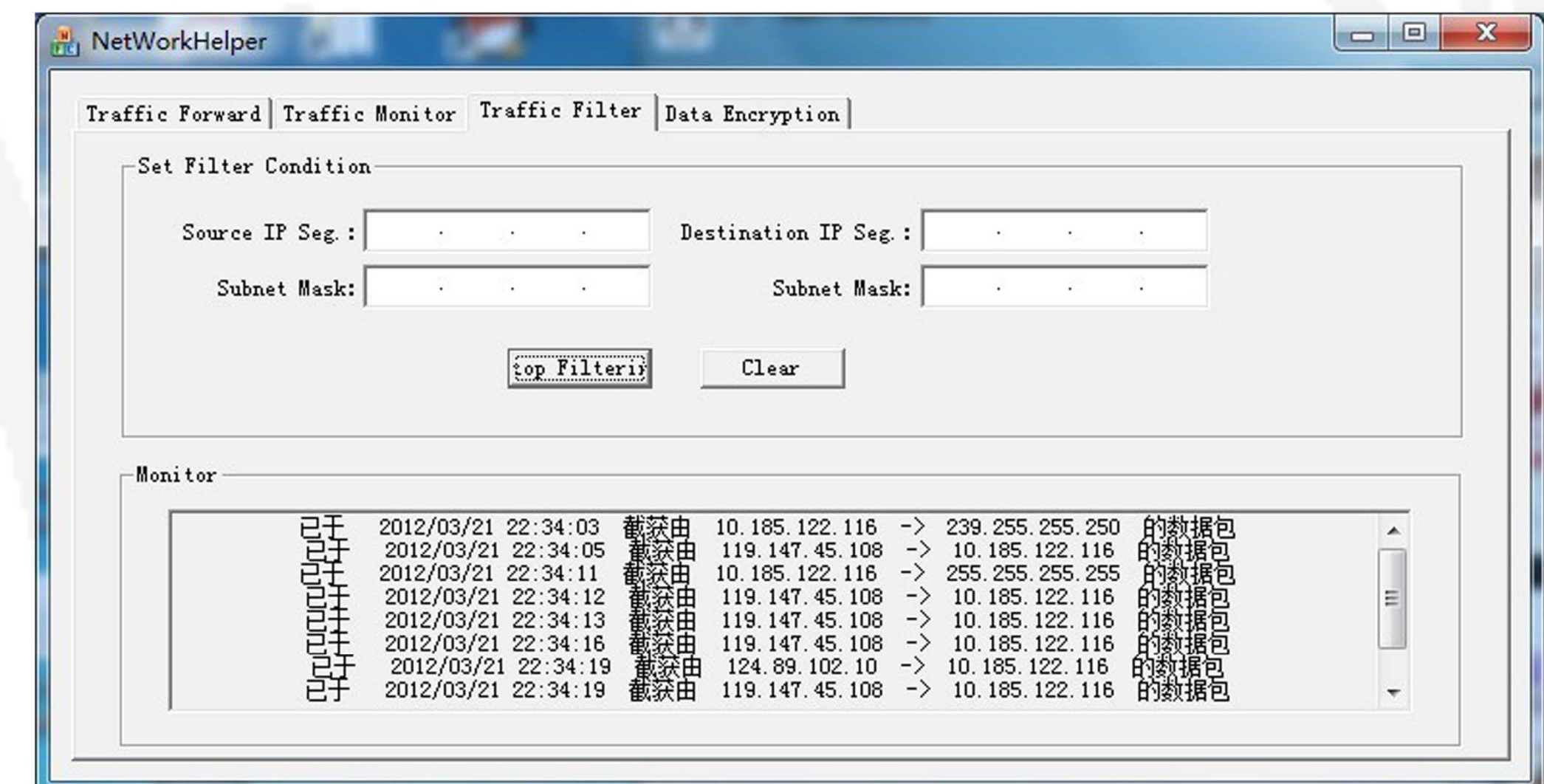**Traffic Monitor**

Traffic Filter

Traffic Encryption

Figure 2: Traffic Filter

Current Study

The project tries to simulate the data transmission by utilizing package capture analysis, package switching, package filtering, encryption and decryption, and VPN technique. It mainly starts with intercepting in the network environment and capture all the packages. Then IP packages will be filtered. Once valid packages are obtained, decryption operation will be conducted. Information can be padded to the original messages and the new messages will be re-packaged and send out to the next receiver. In this way, the project aims to realize message transmission simulation.
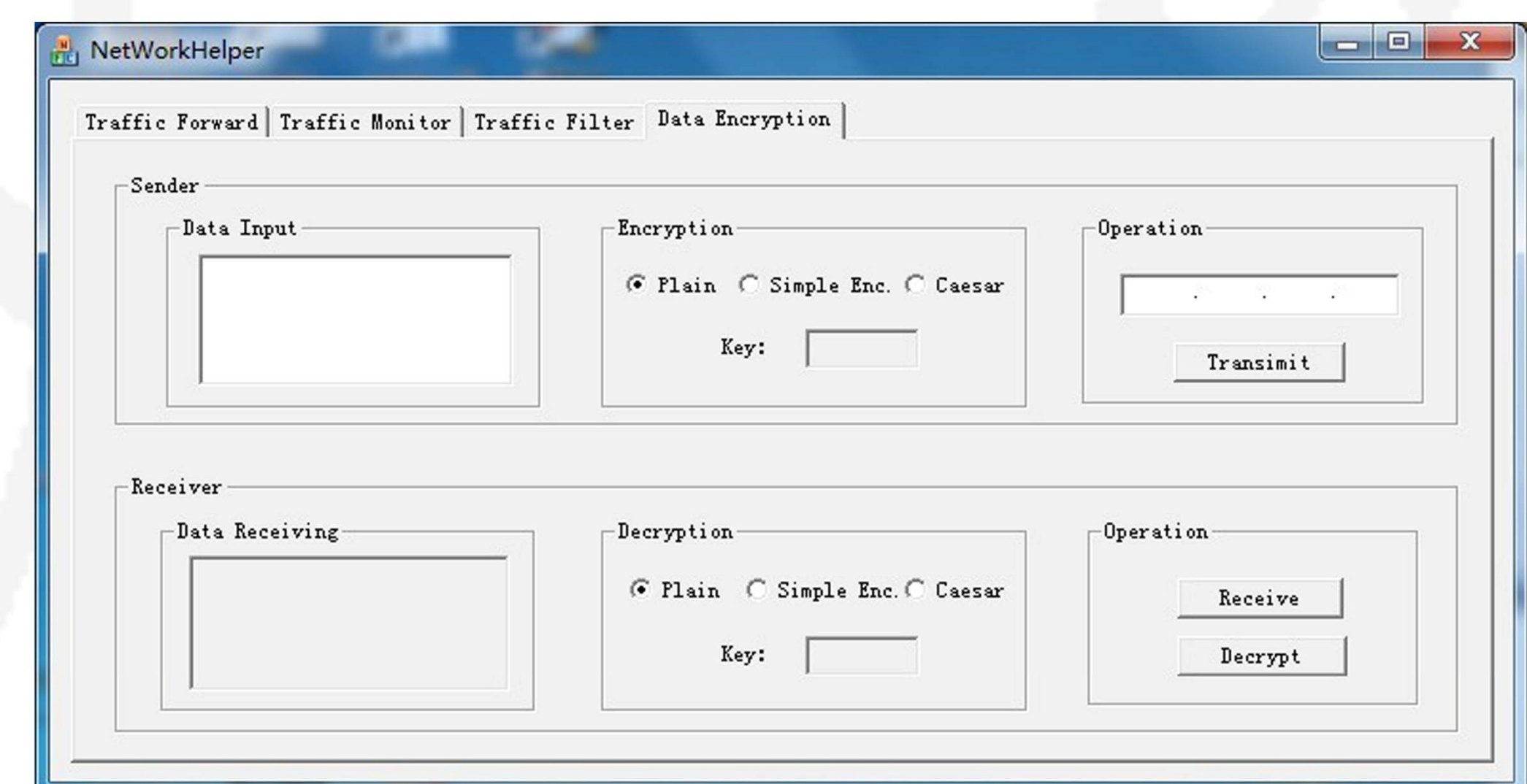

Figure 3: Data Encryption

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