Network Lab 1 - Report

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1. Design Details

   Just a TCP over TCP proxy. Nothing extraordinary.

2. Compiling

   On Windows, use Release compiling mode, with Boost library installed in E:\Libraries\. This is designed on Windows, but it should be able to run on any platform.

3. Usage

   To run Alice, use:

   Server.exe 127.0.0.1 7000 172.19.0.1 8000 Alice

   To run Bob, use:

   Server.exe 172.20.0.1 8000 172.20.0.2 7000

   The Bob program will automatically redirect data flow to 127.0.0.1:8000.

4. Performance

   On my computer, it can achieve 70Mbps with iperf test. Sanity test is not available for me, since I figure out Cygwin changed every LF to CRLF using pipe forwarding, and causes diff check always fails. Notepad++ text comparing shows the transferred files are the same. Forwarding traffic to a Shadowsocks client also shows completely no problem accessing websites like taobao.com:443.

   Test data is shown below.

```
[  4]  0.0-79.7 sec   665 MBytes  70.0 Mbits/sec
[  4] local 172.20.0.1 port 30001 connected with 172.20.0.1 port 12929
[  4]  0.0-25.2 sec   209 MBytes  69.7 Mbits/sec
```