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Bug and Limitations:
1. The request has to be to PORT 80 from the client
2. Start/Stop is done partially. The entries are done but not able to check them continuously.
3. If the connections are from different clients simultaneously there could be problem with NAT table handling. (Multiple connections from the same client are handled properly)

Config file entry limitations:
1. Proper data needs to be entered into config files (/proc)
2. The public_ip, private_ip of the relay server machine has to be specified else the relay server does not know the incoming packets from clients and outgoing packets.
3. Please enter number into the gport entry (If non number is entered then it is not handled)

Brief Introduction:

I have four files

krelay.c - It has all the functions and implementation

The Main functions are

FromRealSrv() - It does the packet handling for TCP/UDP in POST hook.

FromClient() - Handles the packet handling for TCP/UDP in PRE hook.

krelay.h - This has all the header files included, structure declaration, global variable declarations and function prototypes

tcprelay.c   This has the user level implementation of TCP relay (Part of the code is adopted from TCP Booster code)

tcpconfig   Configuration file for TCP relay. It has to be in the same directory as the tcprelay.c . The entries should be in the format below

Listening port

Real server IP

Implementing and Testing:

1. VMWare workstation over Windows Vista Professional

2. Guest OS: Ubuntu

Testing was done using Mozilla Firefox web browser and telnet for TCP part.

I also used UDP client and server programs to test the UDP part.

I have used three clones of OS and made them as Client, Relay server and Real server to get the required topology.

Tools :
wireshark   For analyzing the packets
cscope - for searching through kernel code

self test result
1) multiple connection   - 4
2) reliability   - 5
3) /proc support   - 5
4) start / stop   - 2
5) integrity   - 5

6) etc
I came to know about the network hooks and there usage and how the TCP relay works.