Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram

COM405T

How a SNULL(Simple Network Utility for Loading Localities) works

Exercise 8

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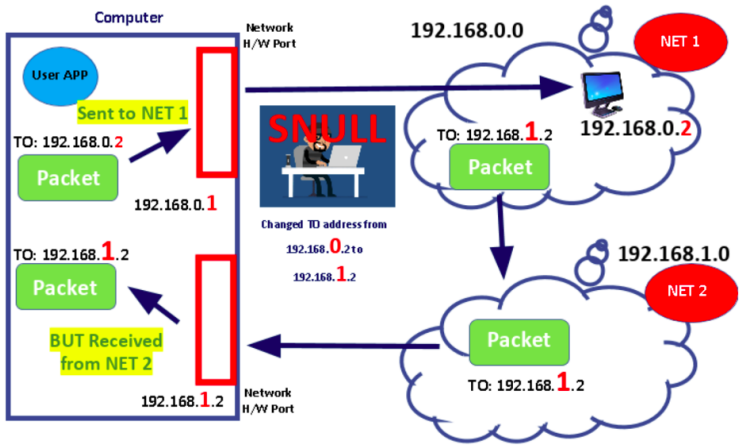
1 Introduction

SNULL (Simple Network Utility for Loading Localities) is similar to the loopback interface but sends the same packet back to the sender as though it received from a different outside network.



2 Working

- The snull module creates two interfaces. These interfaces are different from a simple loopback, in that whatever you transmit through one of the interfaces loops back to the other one, not to itself. It looks like you have two external links, but actually your computer is replying to itself.
- Unfortunately, this effect can't be accomplished through IP number assignments alone, because the kernel wouldn't send out a packet through interface A that was directed to its own interface B. Instead, it would use the loopback channel without passing through snull. To be able to establish a communication through the snull interfaces, the source and destination addresses need to be modified during data transmission. In other words, packets sent through one of the interfaces should be received by the other, but the receiver of the outgoing packet shouldn't be recognized as the local host. The same applies to the source address of received packets.
- To achieve this kind of "hidden loopback," the snull interface toggles the least significant bit of the third octet of both the source and destination addresses; that is, it changes both the network number and the host number of class C IP numbers. The net effect is that packets sent to network A (connected to sn0, the first interface) appear on the sn1 interface as packets belonging to network B.
- So the packet accordingly gets rejected by the dormer IP address since the packet's destination is not the same as its. For example, a packet aimed at 192.168.0.2 will leave through sn0 and reappear at sn1 with a destination address of 192.168.1.2, which is not a local address for the host computer.

- Now the packet goes to the changed destination network /IP address with the same contents as the previous one. The reply from this IP address is collected using the another Network port from the Host/Source IP address