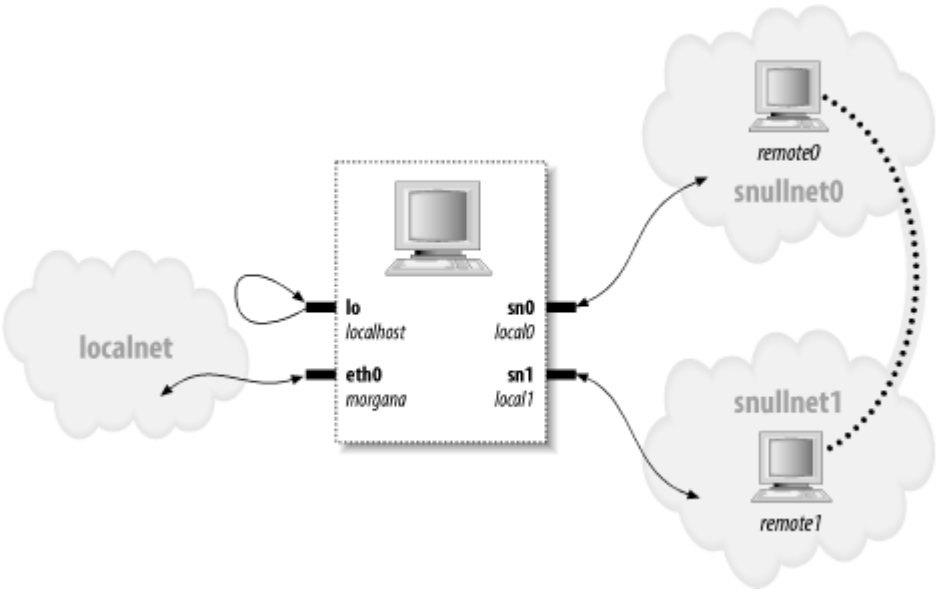
Device Drivers lab 8 - How SNULL Works?

CED17I044 – J Manoj Kumar

Below picture depicts the interface of SNULL:



What is SNULL?

SNULL – Simple Network Utility for Loading Localities,, driver of the network device, driver that does not talk to the ”actual” devices, works like a loopback device, simulates actual operations, simulates communication with actual servers, does not send hardware requests.

How SNULL works?

The SNULL module creates two interfaces. These interfaces are different from a simple loopback

To be able to establish a communication through the SNULL interfaces, the source and destination addresses need to be modified during data transmission. 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.

Example:

Let the IP[3] - represent the the 32 bits.

IP - "IP[0] **.** IP[1] **.** IP[2] **.** IP[3]" IP[0] - part 1,

IP[1] - part 2, IP[2] - part 3, IP[3] - part 4.

Snull() { // Some initializations

IP[2] ^= 1; // Rebuild checksum

// Packet ready to be sent }

The packet is now sent. The operation is done by swapping the last bit of the 3rd octet of IP using an XOR operator. And thus for the user, a packet seems to magically come from some other network so that he / she can test other codes which takes care of incoming packets from other networks.