DEVICE DRIVERS

EXERCISE 8 - Write on how a SNULL (Simple Network Utility for Loading Localities) works, need not execute, just soft copy is sufficient.

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SNULL (Simple Network Utility for Loading Localities) is a memory-based modularized network interface. The interface uses the Ethernet hardware protocol and transmits IP packets.
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.