

IP transmission exercise

Sally is on an ethernet LAN. Her IP address is 192.32.15.1.

She wishes to communicate with Harry. His IP address is 192.32.16.2.

There are various possible netmasks that Sally's computer could have (though it can actually be given only one of them). Depending on her netmask, Harry's address might lie within Sally's local network, or not. If Sally thinks Harry's address is local, she will ARP for him and talk to him using ethernet directly. If not, she will ARP for her default gateway and send traffic for Harry to it instead.

Consider each of the following netmasks. For each, determine whether Harry's address will be considered local or not. (That is, go through the list treating each netmask separately as if it were Sally's. Determine which of them would place Harry, at his 192.32.16.2 address, within her network.)

255.255.0.0
255.255.128.0
255.255.192.0
255.255.224.0
255.255.240.0
255.255.248.0
255.255.252.0
255.255.254.0
255.255.255.0
255.255.255.128
255.255.255.192
255.255.255.224
255.255.255.240
255.255.255.248
255.255.255.252
255.255.255.254
255.255.255.255

What about Jim, Sue, and Alice.

Jim's address is 192.32.15.245

Sue's is 192.32.15.9

Alice's is 192.32.15.3

(See the FORE Systems iptrans.pdf tutorial "The IP Transmission Process.")

The assignment:

To perform this assignment, please print out 4 copies of this page. Label them "Harry," "Jim," "Sue," and "Alice," Sally's friends. On the page for each friend, cross out the netmasks for

which Sally will not consider the friend to be local. (Figure out where the network to which Sally belongs begins and ends-- it depends on the netmask-- then look and see whether the friend's address is in or out of that network.)

Turn in your 4 pages.