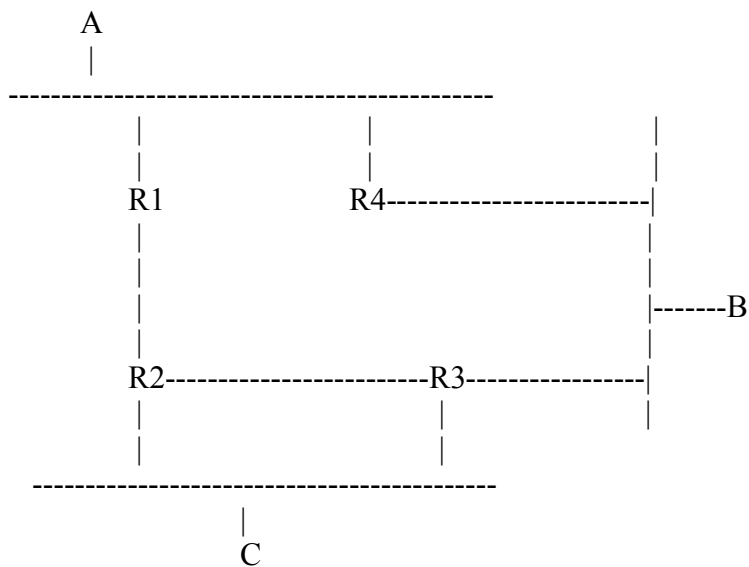


CS 430/594 Routing Spring, 2005 straight

Lab 3: due: Feb 17th broadcasting & multicasting

This lab is designed to get you started on link-state routing such as OSPF. The routing is still static. Use IP protocol 89 again. See the description for `vnIPSendPacket`. First, some terms. **multihomed** means a host with multiple network cards/addresses. A **router** will be a multihomed host with interfaces on multiple networks/subnets. Here, even a non-router host can initiate a broadcast, although for routing purposes that will not be very important. So: if the IP protocol is 17 (i.e. UDP) the broadcast should just go over the subnet. If the IP protocol is 89, (and this is a broadcast—the host is 255) then the hosts must relay the packet—which means changing the address—over all interfaces **other** than the one it arrived on—assuming that this packet has not already been forwarded. So you'll need the first steps here—e.g. Originating sequence numbers, etc.



A, B, and C are ordinary hosts, R1, R2, R3, and R4 are routers.

Note: this lab has ordinary broadcasts across a subnet, and routing broadcasts, which must cross all subnets—must propagate across the whole LAN. For Lab 4, we'll start dynamic routing, and have each router gather information about link metrics, and then broadcast when a metric changes, etc.

OSPF multicast: 224.0.0.5 we should have some useful stuff in the faq on the web page. (OSPF traditionally uses IP address 224.0.0.5 for multicasting between its routers.)