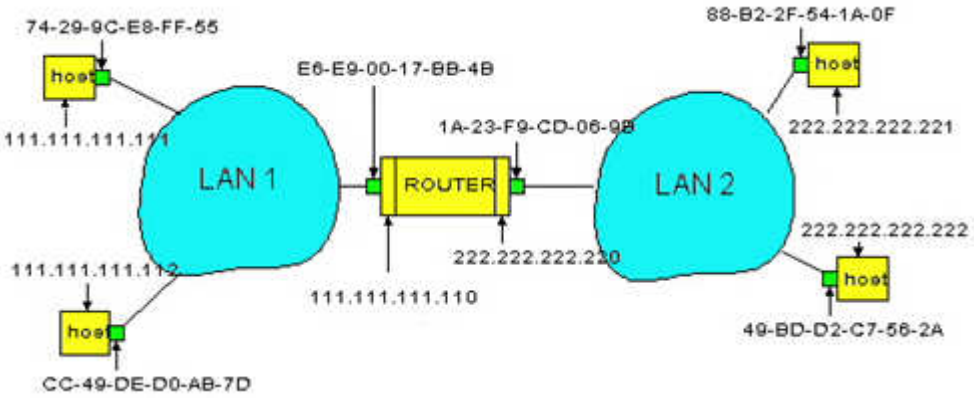
電腦網路概論

1. During normal IP packet forwarding at a router, which the following packet fields are updated?
2. **IP Addressing** - A router has just received the following new IP address ranges: 57.6.96.0/21, 57.6.104.0/21, 57.6.112.0/21, 57.6.120.0/21. If all of these IP's refer to the same outgoing line interface, can they be aggregated? If so, to what? If not, why not?
3. **Link Layer Addressing** - Consider the network depicted in the figure below. The IP addresses and MAC addresses of individual interfaces are as denoted in the figure. Suppose that the sender host with the IP address 111.111.111.111 wants to send an IP datagram to the receiver host with IP address 222.222.222.222. Answer the following questions:



(a)How many subnets are there in this network? Which IP addresses belong to which subnet?
(b) What is the destination IP address of the datagram when it leaves the sender host? What is the destination IP address of the datagram when it leaves the router?
(c) What is the destination MAC address of the frame when it leaves the sender host? What is the destination MAC address of the frame when it leaves

4. If a host was shut down and replaced its network interface card, it will cause the inconsistency of ARP caches in the other hosts in the same LAN. How can you solve it？Please describe the details.
5. Please briefly describe the sameness and differences between switches and router