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1 Design

1.1 Goal

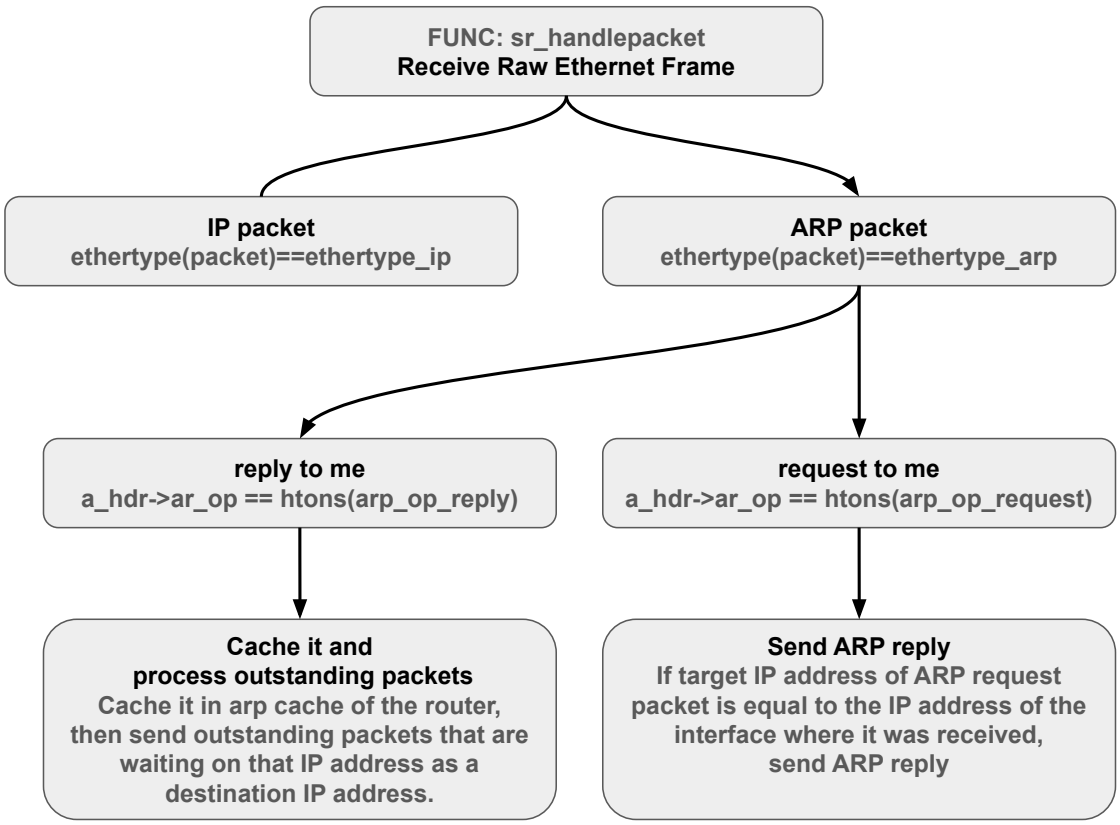
- Build a static router that can perform basic routing functions and is runnable as a single shell command(./router/sr).
- Handle both ARP and IP packets after receiving a raw ethernet frame.
- Process and forward packets to correct outgoing interfaces same as lab manual page 12.

1.2 Limitation

- Can handle only five ICMP messages.
- Cannot handle IP packets with many other protocols including IPv6.
- Does not support fragmentation. (All the packets should not be fragmented)
- It is a static router, so router configuration(routing table) is initialized only when the static router runs. Other routing information cannot be updated, inserted, or deleted.
- All the TCP/UDP packets would not be processed, and the router will just send back the ICMP port unreachable message.

2 Implementaion

2.1 Handling ARP packet



2.2 Handling IP packet