

problem { path loss
interference
propagation

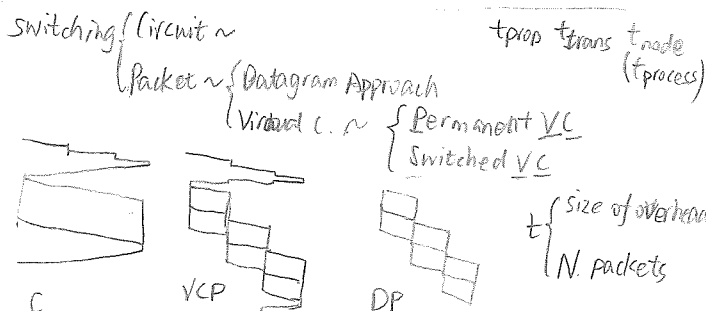
scanning { Passive Scanning
AP (MAC, SSID) Active Scanning (Probe request frame)

CSMA/CA (DCF)

PIFS	RTS	→ with Network Allocation Vector
SIFS	CTS	SIFS
	DATA	Frame
	ACK	SIFS

(PCF)

PIFS	Beacon
SIFS	
SIFS	Poll
	ACK + Data



IPv4 addressing

- classful ~ Class D: 1110 ~ Multicast 224 ~ 239.
- Class E: rsrvd. 240 ~ 255.
- classless (subnet) ~

This host = 0.0.0.0/32 (boot strap)

Loopback = 127.0.0.0/8

Unicast = 224.0.0.0/4

Limited broadcast = 255.255.255.255/32

Private

- 10.0.0.0/8
- 172.16.0.0/12
- 192.168.0.0/16

CG-DHCP dest all 255.255.255.255.

- 1 DHCPDISCOVER → 0.0.0.0
- 2 DHCPOFFER ← You, Server
- 3 DHCPREQUEST → Client, Server
- 5 DHCPACK ← ~
- 4 ~ DECLINE 7 ~ RELEASE 8 ~ INFORM
- 6 ~ NACK

Tag=53 | Len=1 | Value=1

file Name(128B) Options

~ (RIP) Routing info exchange among immediate neighbor
 ~ (OSPF) Routing table exchanged among all nodes. LSDB
 ~ (BGP4) with Dijkstra Algorithm.
 policy dependent (\approx distance vector)

Distance vector

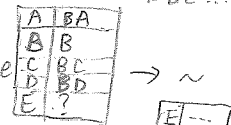
A	12	7	...
A	B	C	...

A	2	...
B	3	5
C

A	BA
B	AB

update: periodic
pass: own routing table

update: Event-triggered
pass: own & others ~



The diagram illustrates the structure of a TCP header. At the top, it is divided into three main sections: **TCP**, **Header**, and **Data**, with a note **max** indicating the data size. The header itself is a sequence of fields:

- Src port** and **Dest port**: Each is 2 bytes long.
- Seq num**: Sequence number, 4 bytes long.
- Ack num**: Acknowledgment number, 4 bytes long.
- Window size (B)**: Window size in bytes, 2 bytes long.
- Total checksum**: Checksum, 2 bytes long.
- Urgent pointer**: Urgent pointer, 2 bytes long.
- Options/and padding**: Variable length field.

Below the header, a **total/ly** calculation is shown: $20B \sim 60B$. To the right, a **reset finish** state is indicated. Below the header, a **Header | Urgent | normal** structure is shown, with a **reset** arrow pointing to the **Header** field.