UNIT-3

The Network Layer

Route Discovery (3)
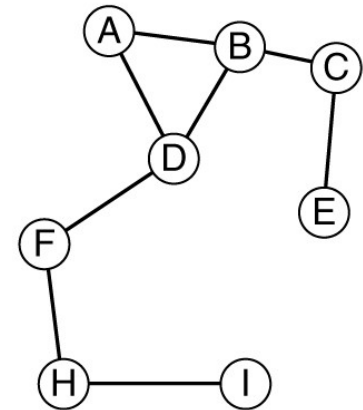
Source address	Destination address	Destination sequence #	Hop count	Lifetime

Format of a ROUTE REPLY packet.

Route Maintenance

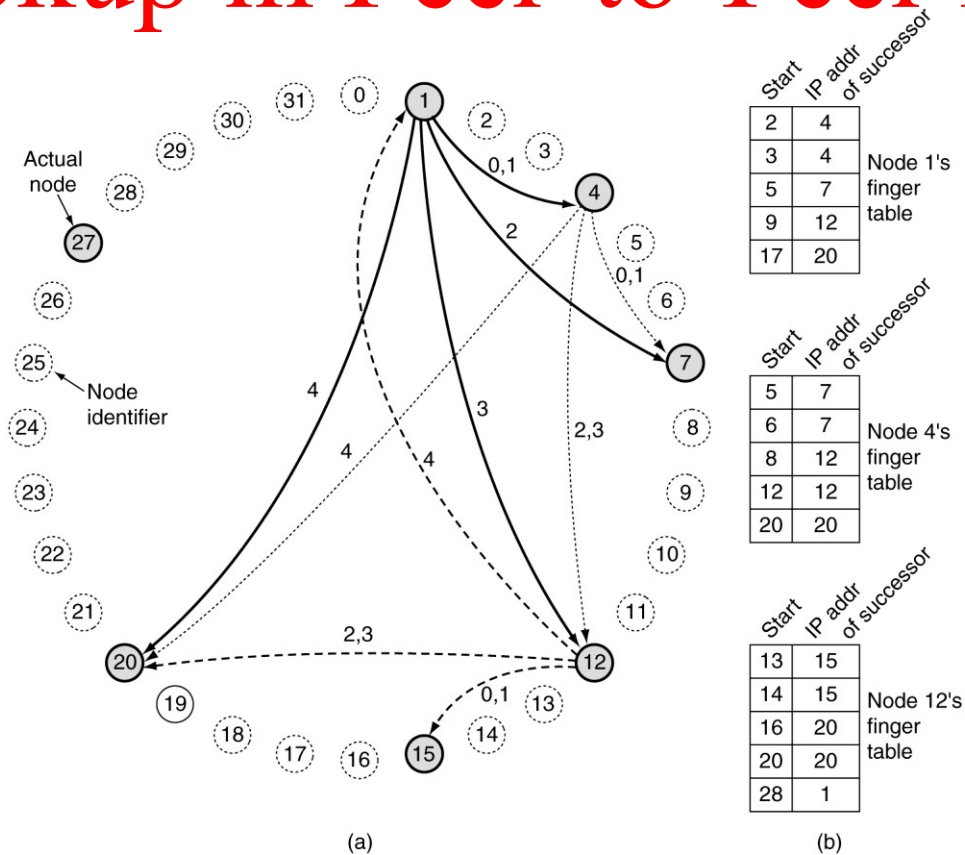| Dest.	Next hop	Distance	Active neighbors	Other fields
A	A	1	F, G	
B	B	1	F, G	
C	B	2	F	
E	G	2		
F	F	1	A, B	
G	G	1	A, B	
H	F	2	A, B	
I	G	2	A, B	

(a)

(b)

(a) D's routing table before G goes down.

(b) The graph after G has gone down.

Node Lookup in Peer-to-Peer Networks

(a) A set of 32 node identifiers arranged in a circle. The shaded ones correspond to actual machines. The arcs show the fingers from nodes 1, 4, and 12. The labels on the arcs are the table indices.

(b) Examples of the finger tables.

Congestion Control Algorithms

- General Principles of Congestion Control

- Congestion Prevention Policies

- Congestion Control in Virtual-Circuit Subnets

- Congestion Control in Datagram Subnets

- Load Shedding

- Jitter Control

Congestion
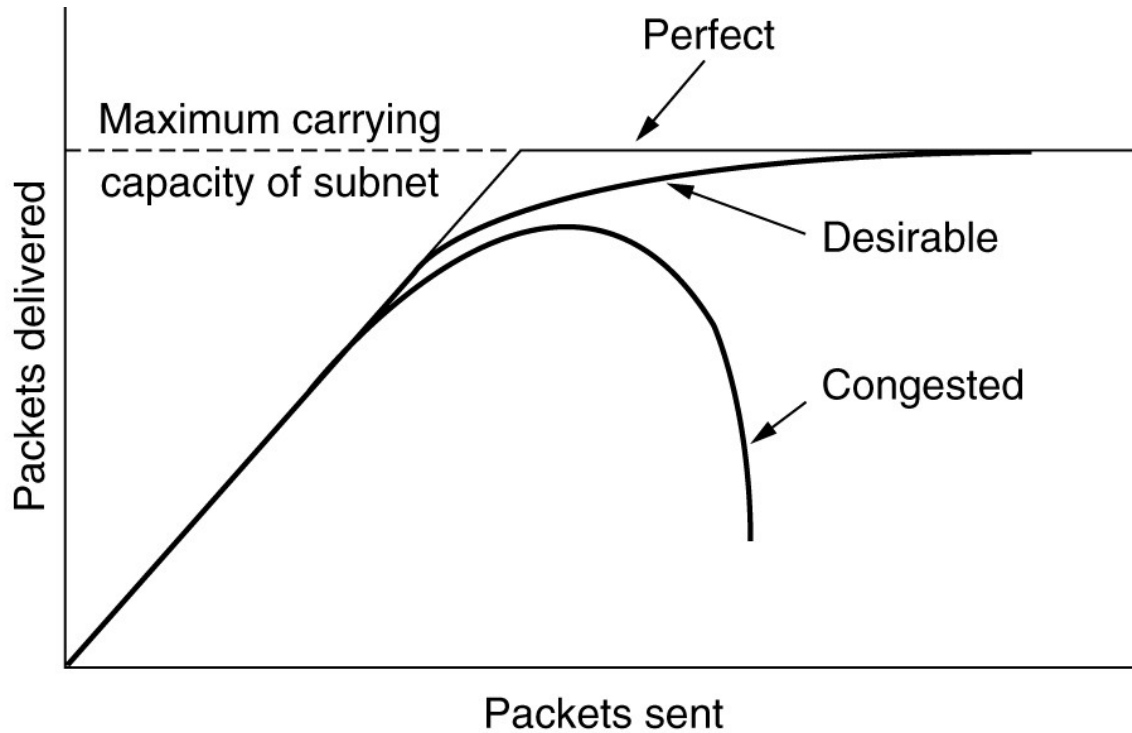
When too much traffic is offered, congestion sets in and performance degrades sharply.

TYPE OF CONGESTION CONTROL

A)OPEN LOOP-

1. ALGO WORK AT SOURCE.
2. ALGO WORK AT DESTINATION.

B) CLOSED LOOP-

1. EXPLICIT FEEDACK.
2. IMPLICIT FEEDBACK.

General Principles of Congestion Control (Closed loop)

1. Monitor the system .
   - detect when and where congestion occurs.
2. Pass information to where action can be taken.
3. Adjust system operation to correct the problem.