Task-2: virtual routing (Application-layer routing)

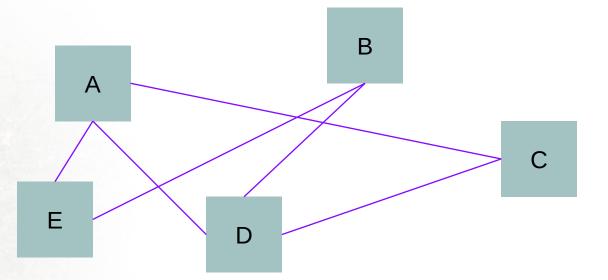
- self-organized routing
 - Select a virtual topo for members' computers
 - Build virtual connection between computers according to the virtual topo;
 - Each computer acts as both client and router.
 - Each computer exchanges and updates routing table periodically.
 - A computer can send message to other computers,

Hint:

- >IP-in-IP (IP-layer virtual routing) or
- >use sock directly (Application-layer routing)

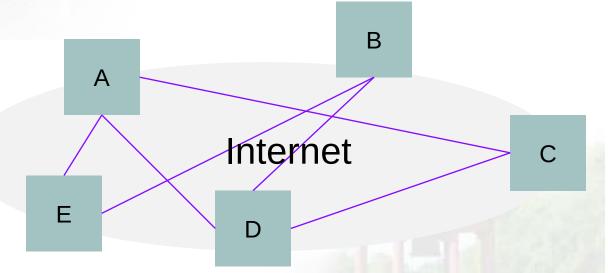
Step 1:

Design the virtual topo (link cost)



Step 2:

Build the virtual Topo over Internet & exchange the routing information periodically



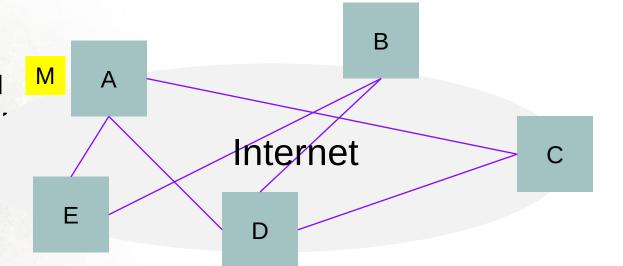
Step 3:

Simulate the routing and forwarding. For example A sends M to B. Which path is better?

$$A \rightarrow E \rightarrow B$$
? or

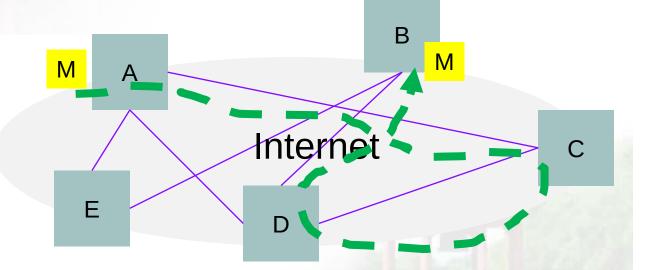
$$A \rightarrow D \rightarrow B$$
?

$$A \rightarrow C \rightarrow D \rightarrow B$$
?

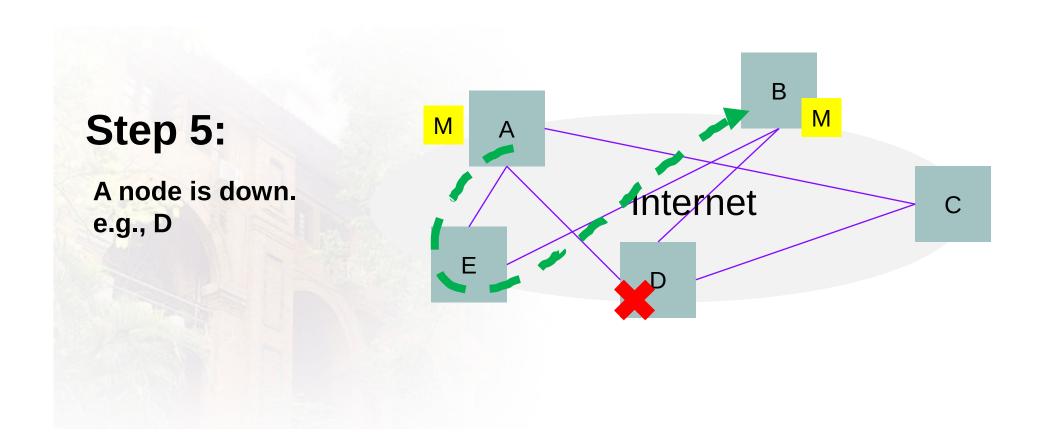


Step 4:

Transmit data M via the best path, e.g., $A \rightarrow C \rightarrow D \rightarrow B$



Please try different topos and different routing algorithms (LS & DV).

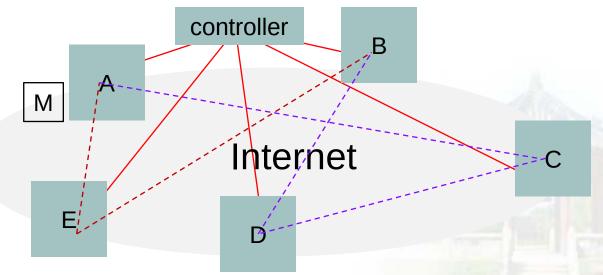


Please try different topos and different routing algorithms (LS & DV).

Task-2: virtual routing

- centralized routing
 - Like the above self-organized routing
 - Controller determines and distributes routing policy (routing table) to each member

Example: A sends M to B. Which path is better? $A \rightarrow E \rightarrow B$? or $A \rightarrow C \rightarrow D \rightarrow B$?



Submit

- PPTs + demo video
- Source code (and the compiled executable files)
- The project report documents (including introduction, design, setup and deploy, and result, project management records)
- The individual report of each team members (your contributions, and anything else you want to talk about)
- votes of the top 5 teams (based on their presentations and your observations, give comments of 2-3 sentences)
- A list that shows each member's contribution and grade.

Put all file into a package and name it as:

A_B_C.rar,

A: the student ID of group leader;

B: the name of group leader;

C: task1 or task2

example: 1500001_张三_task1.rar

Group leader submit it to the given FTP server.

Basic points

- Protocol design. (10 points)
- Finish basic function correctly (error). (60 points)
- On time (WEEK 15). (10 points)
- Documents, codes, presentation. (20 points)
- votes
- in-group assessment

Evaluation and Grading Policy

Class Participation	5%
Weekly Written Assignments	10%
Midterm Examination	10%
Final Examination	60%
Group Project	15%

Miscellaneous

- Teaching Assistant:
 - 费星瑞 (feixr@mail2.sysu.edu.cn)
- FTP://202.116.70.254
 - Usr/pwd: ComNet/ComNet