

1 Routing Protocols

Consider the network presented in Figure 1. The routers run the Distance Vector routing protocol and apply the “poisoned reverse” rule: if X sends packets to Z via Y , X announces this route to Y with the cost ∞ . We assume that all the routers start to operate. Give the data structures maintained by the routers after convergence—fill in the tables below.

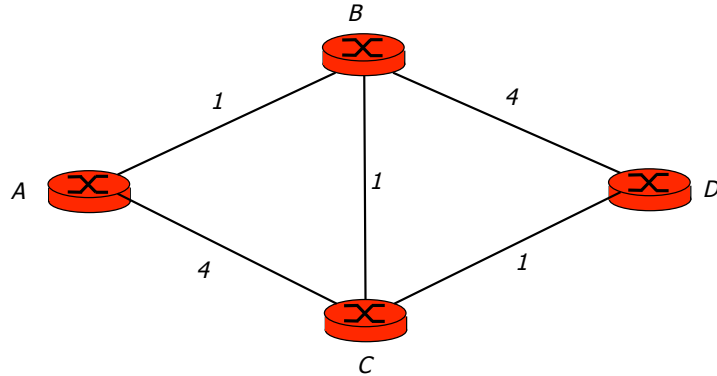


Figure 1: Network topology.

| Costs of A | | via | | Routing tables of A | | | Vector of A | | sent to | |
|------------|---|-----|-------|---------------------|------|-------|-------------|---|---------|---|
| Dest. | B | C | Dest. | via | cost | Dest. | B | C | Dest. | C |
| A | | | A | | | A | | | A | |
| B | | | B | | | B | | | B | |
| C | | | C | | | C | | | C | |
| D | | | D | | | D | | | D | |

| Costs of B | | via | | | Routing tables of B | | | Vector of B | | sent to | | | | |
|------------|---|-----|---|-------|---------------------|------|-------|-------------|---|---------|-------|---|---|---|
| Dest. | A | C | D | Dest. | via | cost | Dest. | A | C | D | Dest. | A | C | D |
| A | | | | A | | | A | | | | A | | | |
| B | | | | B | | | B | | | | B | | | |
| C | | | | C | | | C | | | | C | | | |
| D | | | | D | | | D | | | | D | | | |

| Costs of C | | via | | | Routing tables of C | | | Vector of C | | sent to | | | | |
|------------|---|-----|---|-------|---------------------|------|-------|-------------|---|---------|-------|---|---|---|
| Dest. | A | B | D | Dest. | via | cost | Dest. | A | B | D | Dest. | A | B | D |
| A | | | | A | | | A | | | | A | | | |
| B | | | | B | | | B | | | | B | | | |
| C | | | | C | | | C | | | | C | | | |
| D | | | | D | | | D | | | | D | | | |

| Costs of D | | via | | Routing tables of D | | | Vector of D | | sent to | |
|------------|---|-----|-------|---------------------|------|-------|-------------|---|---------|---|
| Dest. | B | C | Dest. | via | cost | Dest. | B | C | Dest. | C |
| A | | | A | | | A | | | A | |
| B | | | B | | | B | | | B | |
| C | | | C | | | C | | | C | |
| D | | | D | | | D | | | D | |