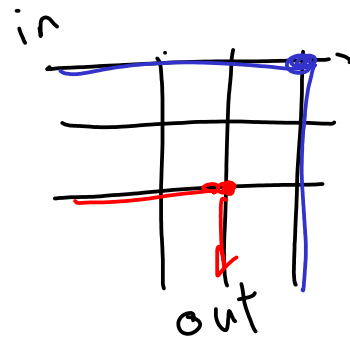


- memory
- bus
- crossbar



Output



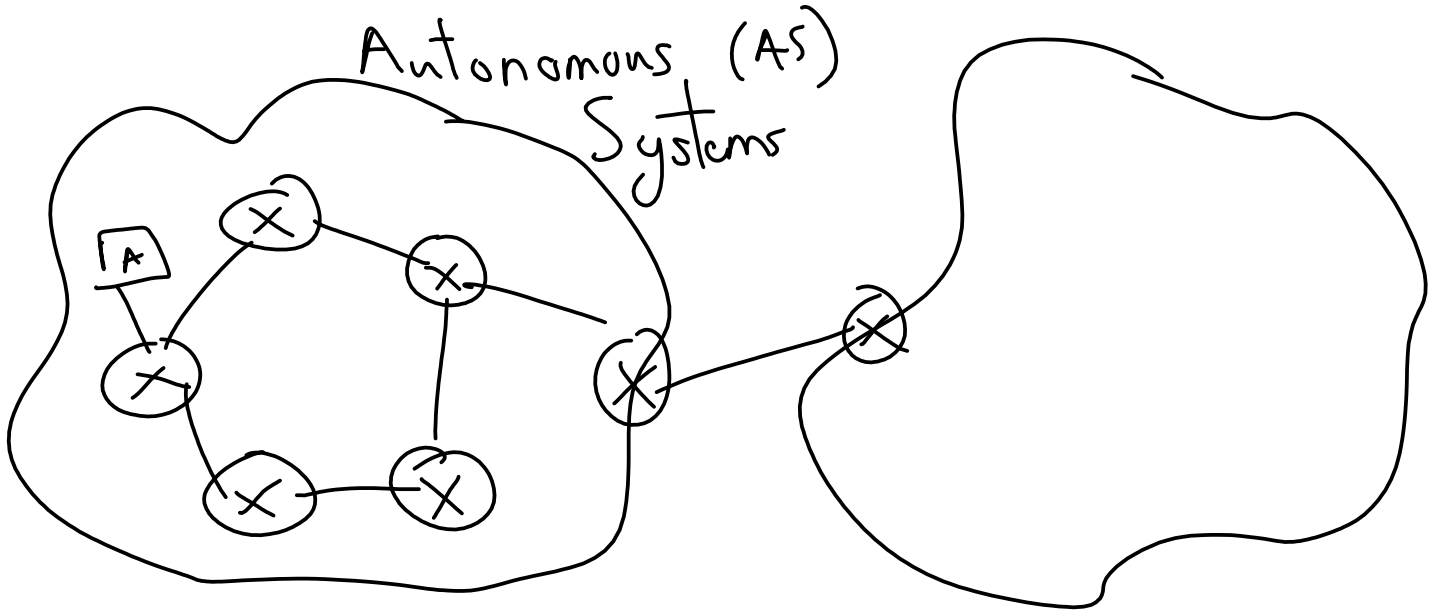
FIFO } scheduling  
Priority }

# Net Neutrality

no blocking

no throttling content or service

no paid prioritization

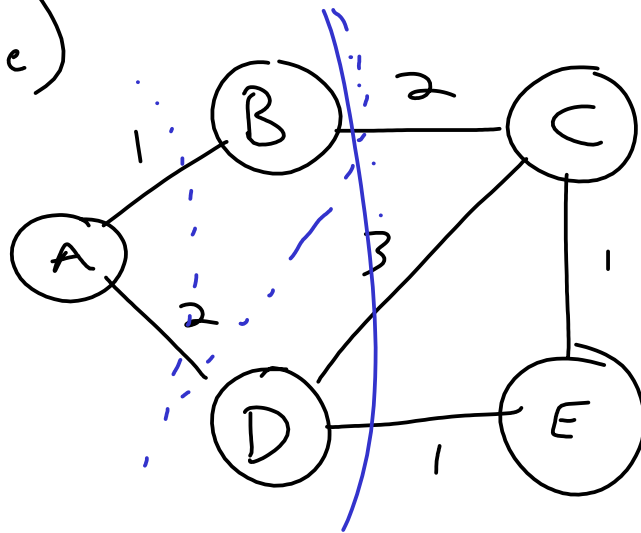


Intra-AS routing  
 "global" static v.s. decentralized  
 static v.s. dynamic

OSPF                      RIP

(link state)

dest	link
B	B
C	B
D	D
E	D



OSPF  
 tcp connection

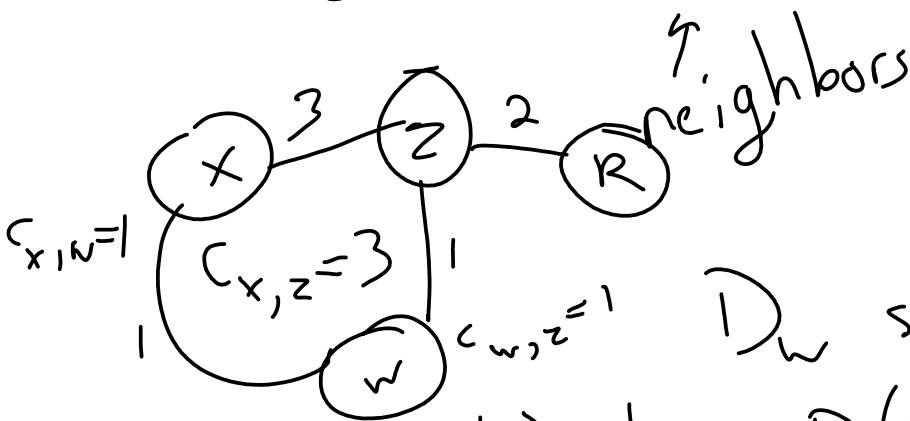
RIP: distance vector

$D_x$ : x's distances to other routers

$D_x(y)$ : x's distance to y

$c_{x,y}$ : cost from x to y (direct connection)

$$D_x(y) = \min_v \left\{ c_{x,v} + D_v(y) \right\} \quad \text{Bellman Ford equation}$$



$D_w$  sent to x

$$D_w(z) = 1 \quad D_x(z) = \min \left\{ \begin{array}{l} c_{x,z} + D_z(z), \\ c_{x,w} + D_w(z) \end{array} \right\}$$

$$D_x = \begin{bmatrix} x, w, z, r \\ 0, 1, 3, \infty \end{bmatrix} = \min \left\{ \begin{array}{l} 3+0, \\ 1+1 \end{array} \right\}$$

receives  $D_w = \begin{bmatrix} x, w, z, r \\ 1, 0, 1, \infty \end{bmatrix}$

update  $D_x = [0, 1, 2, \infty]$

receives  $D_z = [3, 1, 0, 2]$

update  $D_x = [0, 1, 2, 4]$

# Hierarchical OSPF

