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.

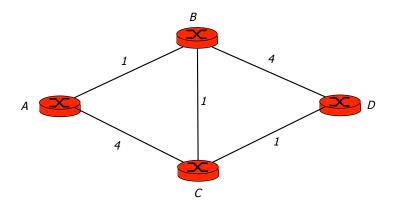


Figure 1: Network topology.

Costs of A	1 37	ia	1 [Ro	utin	ıg tal	les o	fΔ	1	1	Z _O (ctor of A	SOT	nt to	٦	
Dest.	B	$\frac{1a}{C}$		De			_				/ 60	Dest.	В	C	-	
	D		}	De	_	via	cos	5 U		_			D		4	
A					A							A			4	
В					В							В			_	
C					С							С			_	
D					D							D				
Costs of B		via			Ro	outing	g tab	les o	f E	3		Vector of	В	S	ent t	Ю
Dest.	A	С	D)	De	est.	via	cos	t		Ì	De	st.	Α	С	D
A						A					ĺ		A			
В						В							В			
С						С							С			
D						D					Ì		D			
Costs of C		via			Ro	outing	g tab	les o	f C	7	Ì	Vector of	f C	S	ent t	О
Dest.	Α	В	D)	De	est.	via	cos	t			De	est.	Α	В	D
A						A							Α			
В						В							В			
C						С							С			
D						D							D			
Costs of D	V	ia		Ro	utir	ıg tak	oles o	f D		V	/eo	ctor of D	ser	it to		
Dest.	В	С		De	st.	via	cos	st				Dest.	В	С	1	
A					A							A			1	
В					В							В			7	
C					С							С			7	
D					D							D			7	

Solution:

borumon.		
Costs of A	via	
Dest.	В	С
A	-	-
В	1	5
C	2	4
D	3	5
Costs of B		via

Routing tables of A					
Dest.	via	cost			
A	local	0			
В	В	1			
С	В	2			
D	В	3			

Vector of A	sent to	
Dest.	В	С
A	0	0
В	∞	1
C	∞	2
D	∞	3

Costs of B		via	
Dest.	A	С	D
A	1	∞	7
В	-	-	-
C	∞	1	5
D	∞	2	4
Costs of C		via	
Dest.	A	В	D
A	4	2	∞
R	5	1	\sim

Routing tables of B				
Dest.	via	$\cos t$		
A	A	1		
В	local	0		
С	С	1		
D	С	2		
Routing tables of C				

_				
	Vector of B	S	ent to)
	Dest.	A	С	D
	A	∞	1	1
	В	0	0	0
	C	1	∞	1
	D	2	∞	2
	Vector of C		ont to	`

Costs of C	via		
Dest.	A	В	D
A	4	2	∞
В	5	1	∞
\mathbf{C}	-	-	-
D	7	∞	1

D					
Routing tables of C					
Dest.	via	cost			
A	В	2			
В	В	1			
С	local	0			
D	D	1			

D				
Vector of C	5	sent to		
Dest.	A	В	D	
A	2	∞	2	
В	1	∞	1	
С	0	0	0	
D	1	1	∞	

Costs of D	via	
Dest.	В	С
A	5	3
В	4	2
C	5	1
D	-	-

Routin	g tables	of D
Dest.	via	cost
A	С	3
В	С	2
С	С	1
D	local	0

Vector of D	sent to	
Dest.	В	С
A	3	∞
В	2	∞
C	1	∞
D	0	0