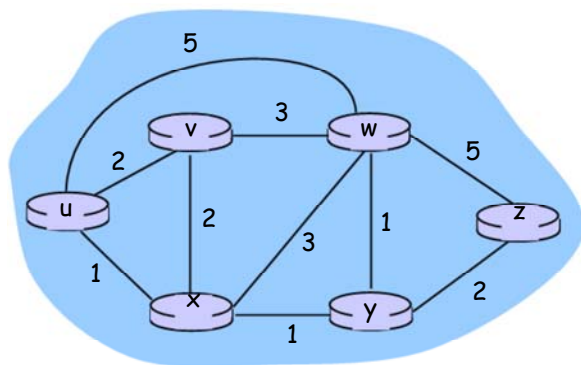


1. 用Distance Vector algorithm產生routing table



以v為起點

Step	N'	D(u), p(u)	D(w), p(w)	D(x), p(x)	D(y), p(y)	D(z), p(z)
0	v	<u>2, v</u>	3, v	2, v	∞	∞
1	vu		3, v	<u>2, v</u>	∞	∞
2	vux		<u>3, v</u>		3, x	∞
3	vuxw				<u>3, x</u>	8, w
4	vuxwy					<u>5, y</u>
5	vuxwyz					

Forwarding table

Destination	Next hop (output link)
u	u
w	w
x	x
y	x
z	x

以w為起點

Step	N'	D(u), p(u)	D(v), p(v)	D(x), p(x)	D(y), p(y)	D(z), p(z)
0	w	5, w	3, w	3, w	<u>1, w</u>	5, w
1	wy	5, w	3, w	<u>2, y</u>		3, y
2	wyx	<u>3, x</u>	3, w			3, y
3	wyxu		<u>3, w</u>			3, y
4	wyxuv					<u>3, y</u>
5	wyxuvz					

Forwarding table

Destination	Next hop (output link)
u	y
v	v
x	y
y	y
z	y

以x為起點

Step	N'	D(u), p(u)	D(v), p(v)	D(w), p(w)	D(y), p(y)	D(z), p(z)
0	x	<u>1, x</u>	2, x	3, x	1, x	∞
1	xu		2, x	3, x	<u>1, x</u>	∞
2	xuv		2, x	2, v		3, v

3	xuyv			<u>2, y</u>		3, y
4	xuyvw					<u>3, y</u>
5	xuyvwz					

Forwarding table

Destination	Next hop (output link)
u	u
v	v
w	y
y	y
z	y

以y為起點

Step	N'	D(u), p(u)	D(v), p(v)	D(w), p(w)	D(x), p(x)	D(z), p(z)
0	y	∞	∞	<u>1, y</u>	1, y	2, y
1	yw	6, w	4, w		<u>1, y</u>	2, y
2	ywx	<u>2, x</u>	3, x			2, y
3	ywxu		3, x			<u>2, y</u>
4	ywxuz		<u>3, x</u>			
5	ywxuzv					

Forwarding table

Destination	Next hop (output link)
u	x
v	x
w	w
x	x
z	z

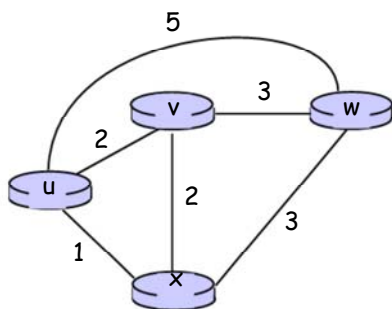
以z為起點

Step	N'	D(u), p(u)	D(v), p(v)	D(w), p(w)	D(x), p(x)	D(y), p(y)
0	z	∞	∞	5, z	∞	<u>2, z</u>
1	zy	∞	∞	<u>3, y</u>	3, y	
2	zyw	8, w	6, w		<u>3, y</u>	
3	zywx	<u>4, x</u>	5, x		-	
4	zywxu		<u>5, x</u>			
5	zywxuv					

Forwarding table

Destination	Next hop (output link)
u	y
v	y
w	y
x	y
y	y

2. 用Distance Vector algorithm產生routing table



$$D_u(v) = \min\{c(u,x) + D_x(u), c(u,w) + D_w(v), c(u,v) + D_v(v)\}$$

$$= \min\{1+2, 5+3, 2+0\} = 2$$

$$D_u(w) = \min\{c(u,x) + D_x(w), c(u,w) + D_w(w), c(u,v) + D_v(w)\}$$

$$= \min\{1+3, 5+0, 2+3\} = 4$$

$$D_u(x) = \min\{c(u,x) + D_x(x), c(u,w) + D_w(x), c(u,v) + D_v(x)\}$$

$$= \min\{1+0, 5+3, 2+2\} = 1$$

u's Forwarding table

Destination	Next hop (output link)
v	v
w	x
x	x

$$D_v(u) = \min\{c(v,u) + D_u(u), c(v,w) + D_w(u), c(v,x) + D_x(u)\}$$

$$= \min\{2+0, 3+5, 2+1\} = 2$$

$$D_v(w) = \min\{c(v,x) + D_x(w), c(v,w) + D_w(w), c(v,u) + D_u(w)\}$$

$$= \min\{2+3, 3+0, 2+5\} = 3$$

$$D_v(x) = \min\{c(v,x) + D_x(x), c(v,w) + D_w(x), c(v,u) + D_u(x)\}$$

$$= \min\{2+0, 3+3, 2+1\} = 2$$

v's Forwarding table

Destination	Next hop (output link)
u	u
w	w
x	x

$$D_w(u) = \min\{c(w,u) + D_u(u), c(w,v) + D_v(u), c(w,x) + D_x(u)\}$$

$$= \min\{5+0, 3+2, 3+1\} = 4$$

$$D_w(v) = \min\{c(w,v) + D_v(v), c(w,x) + D_x(v), c(w,u) + D_u(v)\}$$

$$= \min\{3+0, 3+2, 5+2\} = 3$$

$$D_w(x) = \min\{c(w,x) + D_x(x), c(w,v) + D_v(x), c(w,u) + D_u(x)\}$$

$$= \min\{3+0, 3+2, 5+1\} = 3$$

w's Forwarding table

Destination	Next hop (output link)
u	x
v	v
x	x

$$D_x(u) = \min\{c(x,u) + D_u(u), c(x,v) + D_v(u), c(x,w) + D_w(u)\}$$

$$= \min\{1+0, 2+2, 3+5\} = 1$$

$$D_x(v) = \min\{c(x,v) + D_v(v), c(x,w) + D_w(v), c(x,u) + D_u(v)\}$$

$$= \min\{2+0, 3+3, 1+2\} = 2$$

$$D_x(w) = \min\{c(x,w) + D_w(w), c(x,v) + D_v(w), c(x,u) + D_u(w)\}$$

$$= \min\{3+0, 2+3, 1+5\} = 3$$

x's Forwarding table

Destination	Next hop (output link)
u	u
v	v
w	w

