

Computer Networks Project 1 - Distance Vector Routing Simulator

1. How many rounds did it take each network to converge?

Topology1: 1 Round

Topology2: 3 Rounds

Topology3: 6 Rounds

2. What is the ID of the last node to converge in each network?

Topology1: 4

Topology2: 9

Topology3: 27

3. How many DV messages were sent in total until each network converged?

Topology1: 28

Topology2: 160

Topology3: 840

After convergence, have your simulator route the following data packets using the routing tables created, showing the path used from source to destination.

1. For the first topology: node 0 receives a data packet destined to node 3.
 - a. Current router: 0 nextHop: 1 Cost: 931
 - b. Current router: 1 nextHop: 3 Cost: 746
 - c. Arrived
2. For the second topology: node 0 receives a data packet destined to node 7.
 - a. Current router: 0 nextHop: 5 Cost: 1287
 - b. Current router: 5 nextHop: 7 Cost: 1192
 - c. Current router: 7 nextHop: 8 Cost: 1311
 - d. Arrived
3. For the third topology: node 0 receives a data packet destined to node 23.
 - a. Current router: 0 nextHop: 20 Cost: 1282
 - b. Current router: 20 nextHop: 26 Cost: 986
 - c. Current router: 26 nextHop: 16 Cost: 731
 - d. Arrived

Routing Tables

Topology1:

Vector Table for router: 0

1 907 1

2 291 2

4 960 2

3 931 1

Vector Table for router: 1

4 220 3

0 907 0

3 24 3

2 746 3

Vector Table for router: 2

4 669 4

3 722 3

0 291 0

1 746 3

Vector Table for router: 3

2 722 2

4 196 4

1 24 1

0 931 1

Vector Table for router: 4

1 220 3

2 669 2

3 196 3

0 960 2

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Topology2:

Vector Table for router: 0

9 711 9
5 95 5
4 722 5
8 319 5
3 1330 5
6 709 5
7 190 5
2 415 5
1 1287 5

Vector Table for router: 3

1 446 1
4 608 4
6 792 4
8 1182 4
9 1331 4
5 1235 4
0 1330 4
7 1311 4
2 1278 4

Vector Table for router: 6

8 390 8
9 796 8
1 592 1
7 519 8
2 486 8
4 184 4
3 792 4
5 614 8
0 709 8

Vector Table for router: 1

6 592 6
8 968 8
3 446 3
4 776 6
9 1374 8
7 1097 8
2 1064 8
5 1192 8
0 1287 8

Vector Table for router: 4

9 723 9
8 574 6
3 608 3
5 627 5
0 722 5
6 184 6
1 776 6
7 703 6
2 670 6

Vector Table for router: 7

8 129 8
6 519 8
5 95 5
4 703 8
0 190 5
9 535 8
1 1097 8
2 225 8
3 1311 8

Vector Table for router: 2

9 310 9
8 96 8
6 486 8
1 1064 8
7 225 8
4 670 8
0 415 8
3 1278 8
5 320 8

Vector Table for router: 5

7 95 7
4 627 4
0 95 0
9 630 7
8 224 7
3 1235 4
6 614 7
2 320 7
1 1192 7

Vector Table for router: 8

4 574 6
9 406 2
6 390 6
1 968 1
7 129 7
2 96 2
3 1182 6
5 224 7
0 319 7

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	8 406 2	3 1331 4
Vector Table for router: 9	6 796 2	1 1374 2
4 723 4	0 711 0	7 535 2
2 310 2	5 630 2	

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Topology3:

Vector Table for router:

0

20 254 20

22 917 22

13 1255 20

26 509 20

8 974 22

15 1160 22

1 1144 20

27 1185 22

17 901 20

2 909 20

10 961 22

16 573 20

4 1191 20

12 879 20

14 836 20

28 1131 20

25 1698 20

5 986 20

23 1093 22

7 753 20

21 1373 22

6 596 20

9 589 20

19 800 20

18 1586 20

29 934 20

11 1038 20

24 1240 20

3 1282 20

Vector Table for router:

1

16 699 12

22 541 10

14 840 14

4 47 4

12 265 12

28 498 28

25 554 25

10 497 10

6 722 12

26 635 12

18 1067 4

15 741 4

2 810 10

23 717 10

7 879 12

9 715 12

19 926 12

13 1454 12

8 598 10

27 809 10

17 707 10

0 1144 12

3 1373 10

5 1112 12

21 997 10

20 890 12

29 880 10

11 984 10

24 946 10

Vector Table for router:

2

22 269 22

14 73 14

13 986 13

5 703 14

8 326 22

6 313 14

23 445 22

7 516 14

17 435 22

16 336 14

20 655 14

1 810 22

15 512 22

27 537 22

10 313 22

0 909 14

4 857 22

3 999 14

28 758 22

9 352 14

29 608 22

11 712 22

21 725 22

24 674 22

19 563 14

26 400 14

12 770 14

25 1115 22

18 1349 14

Vector Table for router:

3

21 376 21

6 686 6

15 723 21

16 709 6

14 926 6

4 1417 21

28 969 21

5 1076 6

23 656 21

1 1373 21

26 773 6

18 1722 6

2 999 6

22 832 21

7 889 6

9 725 6

19 936 6

13 1464 6

8 775 21

29 819 21

24 885 21

12 1143 6

25 1678 21

10 876 21

20 1028 6

27 1100 21

17 884 21

0 1282 6

11 923 21

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Vector Table for router:

4

1 47 1

6 769 1

26 682 1

18 1020 18

15 694 15

16 746 1

22 588 1

14 887 1

12 312 1

28 545 1

25 601 1

10 544 1

3 1417 15

5 1159 1

23 761 15

21 1041 15

19 973 1

20 937 1

2 857 1

7 926 1

9 762 1

13 1501 1

8 645 1

27 856 1

17 754 1

0 1191 1

29 924 15

24 990 15

11 1028 15

Vector Table for router:

5

6 390 6

2 703 6

22 907 6

14 630 6

13 1168 6

8 850 6

15 1004 6

16 413 6

4 1159 6

3 1076 6

28 925 6

23 937 6

7 593 6

17 741 6

20 732 6

1 1112 6

27 1175 6

10 951 6

0 986 6

21 1217 6

26 477 6

18 1426 6

9 429 6

19 640 6

29 774 6

11 878 6

24 1080 6

12 847 6

25 1666 6

Vector Table for router:

6

15 614 16

16 23 16

14 240 14

4 769 16

3 686 3

28 535 28

5 390 5

21 827 16

1 722 16

26 87 16

18 1036 16

2 313 14

23 547 16

22 517 16

7 203 16

9 39 16

19 250 16

13 778 16

12 457 16

25 1276 16

10 561 16

20 342 16

8 460 16

27 785 16

17 351 16

0 596 16

29 384 16

24 690 16

11 488 16

Vector Table for router:

7

16 180 16

8 463 29

9 196 16

29 181 29

11 285 29

27 788 29

23 344 29

22 520 29

17 508 16

2 516 16

19 407 16

15 411 29

6 203 16

1 879 16

26 244 16

13 935 16

25 1366 29

24 487 29

14 443 16

5 593 16

10 564 29

0 753 16

21 624 29

18 1193 16

4 926 16

12 614 16

28 657 29

3 889 16

20 499 16

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Vector Table for router:

8

23 119 23
7 463 23
22 57 22
17 109 17
2 326 22
14 399 22
13 1192 17
5 850 17
16 437 17
9 421 17
29 282 23
11 386 23
27 325 22
15 186 23
1 598 22
10 101 22
0 974 22
21 399 23
24 348 23
6 460 17
20 756 17
19 664 17
26 501 17
25 903 22
4 645 22
12 863 22
28 432 23
3 775 23
18 1450 17

Vector Table for router:

9

7 196 16
16 16 16
19 243 16
17 312 17
8 421 17
29 377 16
11 481 16
27 746 17
23 540 17
15 607 17
6 39 16
1 715 16
26 80 16
13 771 16
22 478 17
18 1029 16
2 352 16
25 1269 16
24 683 16
14 279 16
4 762 16
12 450 16
28 574 16
10 522 17
3 725 16
5 429 16
20 335 16
21 820 17
0 589 16

Vector Table for router:

10

1 497 1
22 44 22
16 538 22
14 386 22
4 544 1
12 762 1
28 533 22
25 890 22
8 101 22
15 287 22
27 312 22
17 210 22
2 313 22
0 961 22
6 561 22
26 602 22
18 1551 22
23 220 22
7 564 22
9 522 22
19 765 22
13 1293 22
20 857 22
5 951 22
21 500 22
3 876 22
29 383 22
11 487 22
24 449 22

Vector Table for router:

11

7 285 29
29 104 29
16 465 29
8 386 29
9 481 29
27 711 29
23 267 29
24 410 29
22 443 29
17 495 29
2 712 29
19 692 29
15 334 29
6 488 29
1 984 29
26 529 29
13 1220 29
25 1289 29
21 547 29
14 728 29
5 878 29
10 487 29
0 1038 29
18 1478 29
4 1028 29
12 899 29
28 580 29
3 923 29
20 784 29

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Vector Table for router:

12

1 265 1

26 370 26

16 434 26

22 806 1

14 697 26

4 312 1

28 763 1

25 819 1

10 762 1

20 625 26

6 457 26

18 1332 1

15 1006 1

2 770 26

23 958 26

7 614 26

9 450 26

19 661 26

13 1189 26

8 863 1

27 1074 1

17 762 26

0 879 26

3 1143 26

5 847 26

21 1238 26

29 795 26

11 899 26

24 1101 26

Vector Table for router:

13

16 755 16

2 986 2

20 1001 20

22 1249 16

14 1018 16

5 1168 16

8 1192 16

23 1279 16

15 1346 16

7 935 16

9 771 16

6 778 16

1 1454 16

19 982 16

26 819 16

0 1255 20

17 1083 16

27 1517 16

10 1293 16

4 1501 16

12 1189 16

28 1313 16

25 2008 16

3 1464 16

29 1116 16

11 1220 16

21 1559 16

18 1768 16

24 1422 16

Vector Table for router:

14

6 240 6

1 840 1

2 73 2

16 263 6

22 342 2

4 887 1

12 697 6

28 775 6

25 1188 2

10 386 2

13 1018 6

5 630 6

8 399 2

15 585 2

3 926 6

26 327 6

18 1276 6

23 518 2

7 443 6

9 279 6

19 490 6

27 610 2

17 508 2

0 836 6

20 582 6

21 798 2

29 624 6

11 728 6

24 747 2

Vector Table for router:

15

23 67 23

16 591 23

22 243 23

21 347 23

6 614 23

4 694 4

28 246 28

1 741 4

26 655 23

18 1604 23

14 585 23

3 723 23

5 1004 23

7 411 23

9 607 23

19 818 23

13 1346 23

8 186 23

27 511 23

17 295 23

2 512 23

10 287 23

0 1160 23

29 230 23

24 296 23

12 1006 4

25 1089 23

20 910 23

11 334 23

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Vector Table for router:

16

23 524 7

15 591 7

7 180 7

9 16 9

6 23 6

1 699 26

19 227 19

26 64 26

13 755 13

22 494 9

14 263 6

4 746 26

12 434 26

28 558 6

25 1253 26

10 538 9

3 709 6

5 413 6

8 437 9

29 361 7

11 465 7

27 762 9

17 328 9

2 336 6

20 319 26

21 804 7

18 1013 19

24 667 7

0 573 26

Vector Table for router:

17

9 312 9

22 166 8

8 109 8

23 228 8

7 508 9

2 435 8

16 328 9

19 555 9

15 295 8

1 707 8

27 434 8

10 210 8

0 901 9

14 508 8

13 1083 9

5 741 9

29 391 8

11 495 8

21 508 8

24 457 8

6 351 9

26 392 9

18 1341 9

20 647 9

4 754 8

12 762 9

28 541 8

25 1012 8

3 884 8

Vector Table for router:

18

4 1020 4

19 786 19

1 1067 4

6 1036 19

26 1077 19

15 1604 19

16 1013 19

9 1029 19

22 1507 19

14 1276 19

12 1332 4

28 1565 4

25 1621 4

10 1551 19

3 1722 19

5 1426 19

23 1537 19

21 1817 19

20 1332 19

7 1193 19

17 1341 19

13 1768 19

2 1349 19

8 1450 19

27 1775 19

0 1586 19

29 1374 19

24 1680 19

11 1478 19

Vector Table for router:

19

16 227 16

9 243 16

18 786 18

7 407 16

17 555 16

23 751 16

15 818 16

6 250 16

1 926 16

26 291 16

13 982 16

4 973 16

8 664 16

29 588 16

11 692 16

27 989 16

22 721 16

14 490 16

12 661 16

28 785 16

25 1480 16

10 765 16

3 936 16

5 640 16

2 563 16

20 546 16

21 1031 16

24 894 16

0 800 16

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Vector Table for router:
20

13 1001 13

26 255 26

0 254 0

22 813 26

16 319 26

2 655 26

4 937 26

12 625 26

8 756 26

15 910 26

1 890 26

27 1081 26

17 647 26

10 857 26

14 582 26

5 732 26

23 843 26

7 499 26

9 335 26

6 342 26

19 546 26

18 1332 26

28 877 26

25 1444 26

21 1123 26

3 1028 26

29 680 26

11 784 26

24 986 26

Vector Table for router:
21

15 347 23

23 280 23

3 376 3

6 827 23

16 804 23

22 456 23

4 1041 23

28 593 23

8 399 23

29 443 23

24 509 23

14 798 23

5 1217 23

1 997 23

26 868 23

18 1817 23

7 624 23

9 820 23

19 1031 23

13 1559 23

27 724 23

17 508 23

2 725 23

10 500 23

0 1373 23

11 547 23

12 1238 23

25 1302 23

20 1123 23

Vector Table for router:
22

8 57 8

15 243 8

1 541 10

27 268 27

17 166 8

2 269 2

10 44 10

0 917 0

20 813 8

16 494 8

14 342 2

4 588 10

12 806 10

28 489 8

25 846 27

13 1249 8

5 907 8

23 176 8

7 520 8

21 456 8

6 517 8

9 478 8

26 558 8

18 1507 8

19 721 8

29 339 8

11 443 8

24 405 8

3 832 8

Vector Table for router:
23

15 67 15

8 119 8

16 524 29

21 280 21

29 163 29

24 229 24

7 344 29

22 176 8

17 228 8

2 445 8

6 547 29

4 761 15

28 313 15

9 540 8

1 717 8

19 751 29

26 588 29

13 1279 29

3 656 21

11 267 29

14 518 8

5 937 29

27 444 8

10 220 8

0 1093 8

18 1537 29

12 958 29

25 1022 8

20 843 29

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Vector Table for router:
24

23 229 23
29 306 29
15 296 23
8 348 23
16 667 29
21 509 23
7 487 29
11 410 29
22 405 23
17 457 23
2 674 23
6 690 29
4 990 23
28 542 23
9 683 29
1 946 23
19 894 29
26 731 29
13 1422 29
3 885 23
27 673 23
14 747 23
5 1080 29
10 449 23
0 1240 29
18 1680 29
12 1101 29
25 1251 23
20 986 29

Vector Table for router:
25

27 578 27
1 554 1
16 1253 1
22 846 27
14 1188 27
4 601 1
12 819 1
28 1052 1
10 890 27
7 1366 27
6 1276 1
26 1189 1
18 1621 1
15 1089 27
2 1115 27
23 1022 27
9 1269 1
19 1480 1
13 2008 1
8 903 27
17 1012 27
0 1698 1
29 1185 27
11 1289 27
3 1678 27
5 1666 1
21 1302 27
20 1444 1
24 1251 27

Vector Table for router:
26

4 682 12
16 64 16
12 370 12
20 255 20
1 635 12
6 87 16
18 1077 16
15 655 16
23 588 16
7 244 16
9 80 16
19 291 16
13 819 16
0 509 20
22 558 16
14 327 16
28 622 16
25 1189 12
10 602 16
3 773 16
5 477 16
21 868 16
8 501 16
29 425 16
11 529 16
27 826 16
17 392 16
2 400 16
24 731 16

Vector Table for router:
27

22 268 22
7 788 22
25 578 25
16 762 22
8 325 22
9 746 22
29 607 22
11 711 22
15 511 22
1 809 22
17 434 22
2 537 22
10 312 22
0 1185 22
23 444 22
19 989 22
6 785 22
26 826 22
13 1517 22
24 673 22
20 1081 22
14 610 22
4 856 22
12 1074 22
28 757 22
5 1175 22
21 724 22
18 1775 22
3 1100 22

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	21 593 15		19 588 7
Vector Table for router:	26 622 6	Vector Table for router:	6 384 7
28	18 1565 1	29	1 880 23
6 535 6	2 758 15	7 181 7	26 425 7
1 498 1	7 657 15	23 163 23	13 1116 7
15 246 15	9 574 6	24 306 24	25 1185 23
16 558 6	19 785 6	11 104 11	4 924 23
22 489 15	13 1313 6	16 361 7	28 476 23
14 775 6	8 432 15	8 282 23	3 819 23
4 545 1	27 757 15	9 377 7	14 624 7
12 763 1	17 541 15	27 607 23	5 774 7
25 1052 1	0 1131 6	15 230 23	10 383 23
10 533 15	29 476 15	21 443 23	0 934 7
3 969 15	24 542 15	22 339 23	18 1374 7
5 925 6	20 877 6	17 391 23	12 795 7
23 313 15	11 580 15	2 608 23	20 680 7