ĐẠI HỌC QUỐC GIA TP HỒ CHÍ MINH TRƯỜNG ĐẠI HỌC BÁCH KHOA

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THIẾT KẾ VÀ PHÁT TRIỂN ỨNG DỤNG IOT

BÀI TẬP VỀ NHÀ: BROADCAST COMMUNICATION

LÓP L01 --- HK232

NGÀY NỘP: 04/02/2024

Giảng viên hướng dẫn: Thầy Võ Quế Sơn

Sinh viên thực hiện	Mã số sinh viên
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Thành phố Hồ Chí Minh – 2024

1. Đề bài

Modify the broadcast example with:

- Add sequence number to sent messages
- When a node receives a message, it increases the message counter of the sender by one. Hence, each node will have a array of senders' message counters.

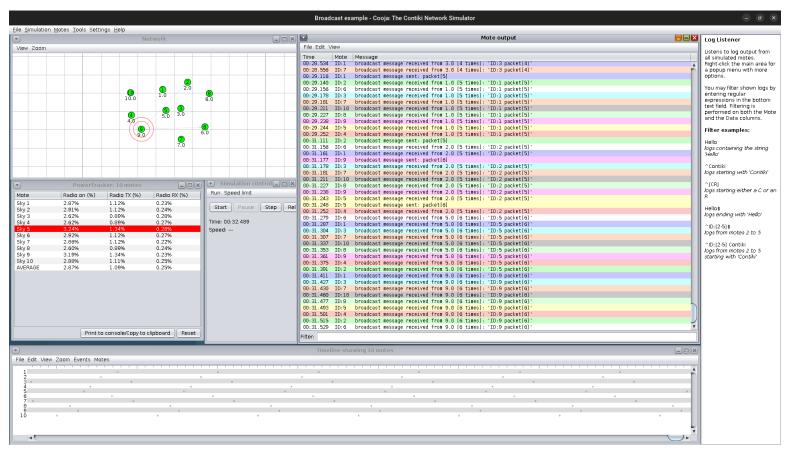
2. Bài làm

2.1. Code đã sửa

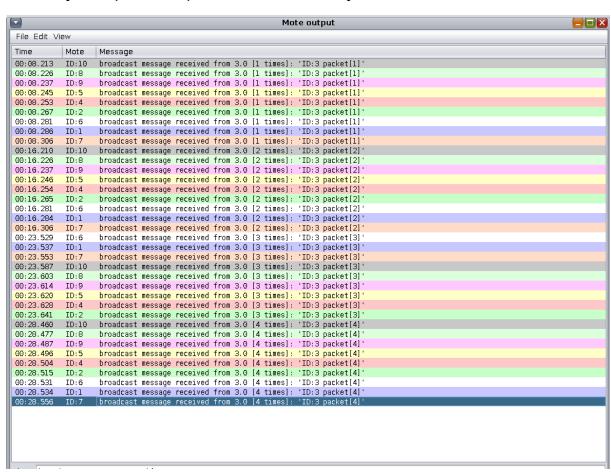
```
#include "contiki.h"
    #include "net/rime/rime.h"
   #include "random.h"
3
    #include "dev/button-sensor.h"
    #include "dev/leds.h"
 7
 8
   #include <stdio.h>
9
10 #include <string.h>
11
12
    #define MOTE NUM 10 /* Number of Motes in Network */
13
14
   static uint16 t packet send count = 1;
                                            /* Number of packets sended */
    /* Number of packet receive from all Mote*/
15
16
    static uint16 t packet receive count[MOTE NUM] = {0};
17
18
    PROCESS(example_broadcast_process, "Broadcast example");
19
20
    AUTOSTART_PROCESSES(&example_broadcast_process);
21
22
    static void
23
    broadcast_recv(struct broadcast_conn *c, const linkaddr_t *from)
24
25
      packet receive count[from->u8[0] - 1]++;
26
      printf("broadcast message received from %d.%d [%d times]: '%s'\n",
27
             from -> u8[0], \ from -> u8[1], \ packet\_receive\_count[from -> u8[0] \ - \ 1], \ (char \ *) packetbuf\_dataptr());
28
29
    static const struct broadcast callbacks broadcast call = {broadcast recv};
30
    static struct broadcast_conn broadcast;
31
    PROCESS_THREAD(example_broadcast_process, ev, data)
32
33
34
      static struct etimer et;
35
      PROCESS_EXITHANDLER(broadcast_close(&broadcast);)
36
37
      PROCESS_BEGIN();
38
39
      broadcast_open(&broadcast, 129, &broadcast_call);
40
41
42
      while(1) {
43
        /* Delay 2-4 seconds */
44
45
       etimer set(&et, CLOCK SECOND * 4 + random rand() % (CLOCK SECOND * 4));
46
47
        PROCESS WAIT EVENT UNTIL(etimer expired(&et));
48
49
       char message send[20];
        sprintf(message_send, "ID:%d packet[%d]", linkaddr_node_addr.u8[0], packet_send_count++);
50
51
        packetbuf copyfrom(message send, sizeof(message send));
52
       broadcast send(&broadcast);
53
        printf("broadcast message sent: packet[%d]\n", (packet send count-1));
54
55
      PROCESS_END();
56
57
   }
58
59
```

2.2. Kết quả trong mô phỏng bằng tool cooja

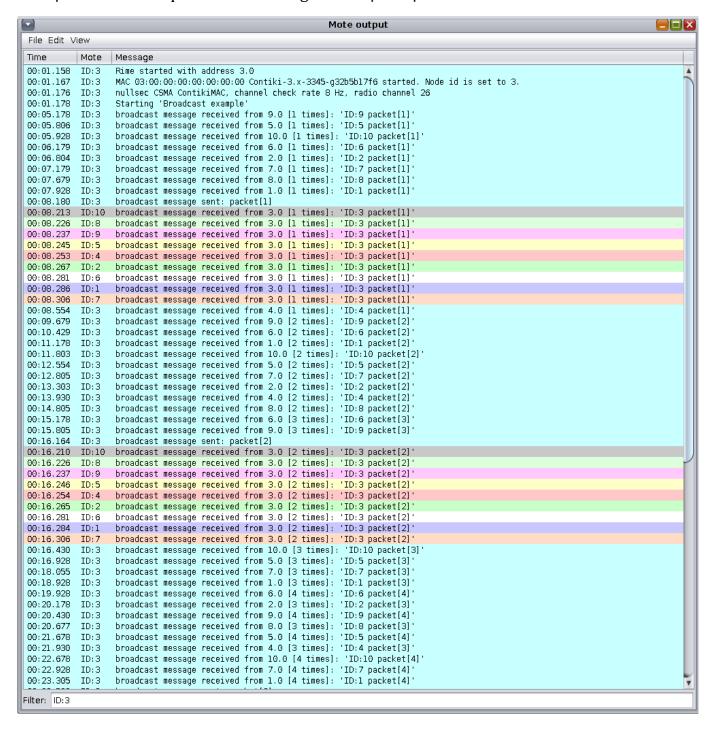
2.2.1. Giao diện kết quả khi run



2.2.2. Kết quả được hiển thị trên cửa số Mote output



2.2.3. Loc kiểm tra kết quả mà Mote ID:3 gửi và nhân được từ các mote khác



2.2.4. Dữ liệu đư	rợc in r	ra từ cửa sổ Mote ouput
00:00.331	ID:8	Rime started with address 8.0
00:00.341	ID:8	MAC 08:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
Node id is set to 8.		
00:00.350	ID:8	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.352	ID:8	Starting 'Broadcast example'
00:00.495	ID:2	Rime started with address 2.0
00:00.504 Node id is set to 2.	ID:2	MAC 02:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.509	ID:6	Rime started with address 6.0
00:00.513	ID:2	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.515	ID:2	Starting 'Broadcast example'
00:00.518 Node id is set to 6.	ID:6	MAC 06:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.528	ID:6	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.530	ID:6	Starting 'Broadcast example'
00:00.607	ID:4	Rime started with address 4.0
00:00.616 Node id is set to 4.	ID:4	MAC 04:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.625	ID:4	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.627	ID:4	Starting 'Broadcast example'
00:00.641	ID:1	Rime started with address 1.0
00:00.650 Node id is set to 1.	ID:1	MAC 01:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.659	ID:1	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.660	ID:7	Rime started with address 7.0
00:00.661	ID:1	Starting 'Broadcast example'
00:00.670 Node id is set to 7.	ID:7	MAC 07:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.679	ID:7	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.681	ID:7	Starting 'Broadcast example'
00:00.815	ID:10	Rime started with address 10.0
00:00.825 Node id is set to 10		MAC 0a:00:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.834	ID:10	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.836	ID:10	Starting 'Broadcast example'
00:00.967	ID:9	Rime started with address 9.0

00:00.974	ID:5	Rime started with address 5.0
00:00.976	ID:9	MAC09:00:00:00:00:00:00:00Contiki-3.x-3345-g32b5b17f6started.
Node id is set to 9.		
00:00.983 Node id is set to 5.	ID:5	MAC 05:00:00:00:00:00:00 Contiki-3.x-3345-g32b5b17f6 started.
00:00.985	ID:9	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.988	ID:9	Starting 'Broadcast example'
00:00.992	ID:5	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:00.994	ID:5	Starting 'Broadcast example'
00:01.158	ID:3	Rime started with address 3.0
00:01.167	ID:3	MAC03:00:00:00:00:00:00:00Contiki-3.x-3345-g32b5b17f6started.
Node id is set to 3.		
00:01.176	ID:3	nullsec CSMA ContikiMAC, channel check rate 8 Hz, radio channel 26
00:01.178	ID:3	Starting 'Broadcast example'
00:05.099	ID:9	broadcast message sent: packet[1]
00:05.120	ID:5	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.129	ID:4	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.140	ID:2	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.156	ID:6	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.161	ID:1	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.178	ID:3	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.181	ID:7	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.211	ID:10	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.227	ID:8	broadcast message received from 9.0 [1 times]: 'ID:9 packet[1]'
00:05.699	ID:5	broadcast message sent: packet[1]
00:05.729	ID:8	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.737	ID:9	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.751	ID:4	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.767	ID:2	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.778	ID:6	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.786	ID:1	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.798	ID:10	broadcast message sent: packet[1]
00:05.805	ID:7	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.806	ID:3	broadcast message received from 5.0 [1 times]: 'ID:5 packet[1]'
00:05.835	ID:10	
00:05.879	ID:4	broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
· - · -	=	2

```
00:05.890
              ID:2
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
00:05.906
              ID:6
00:05.912
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
              ID:1
00:05.928
              ID:3
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
00:05.931
              ID:7
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
00:05.960
                     broadcast message sent: packet[1]
              ID:1
00:05.978
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
              ID:8
00:05.986
              ID:9
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
00:05.994
                     broadcast message received from 10.0 [1 times]: 'ID:10 packet[1]'
              ID:5
00:06.086
              ID:6
                     broadcast message sent: packet[1]
00:06.113
              ID:9
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
00:06.121
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
              ID:5
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
00:06.129
              ID:4
00:06.140
              ID:2
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
00:06.159
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
              ID:1
00:06.179
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
              ID:3
00:06.181
              ID:7
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
00:06.212
              ID:10 broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
00:06.228
                     broadcast message received from 6.0 [1 times]: 'ID:6 packet[1]'
              ID:8
00:06.665
              ID:2
                     broadcast message sent: packet[1]
00:06.711
              ID:10 broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
00:06.727
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
              ID:8
00:06.738
              ID:9
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
00:06.744
              ID:5
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
00:06.752
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
              ID:4
00:06.779
              ID:6
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
00:06.788
              ID:1
00:06.804
              ID:3
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
                     broadcast message received from 2.0 [1 times]: 'ID:2 packet[1]'
00:06.804
              ID:7
                     broadcast message sent: packet[1]
00:07.089
              ID:7
00:07.113
              ID:9
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
00:07.119
              ID:5
00:07.130
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
              ID:4
00:07.140
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
              ID:2
00:07.157
              ID:6
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
```

```
00:07.159
               ID:1
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
00:07.179
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
               ID:3
00:07.211
               ID:10 broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
00:07.228
               ID:8
                     broadcast message received from 7.0 [1 times]: 'ID:7 packet[1]'
00:07.611
               ID:8
                     broadcast message sent: packet[1]
00:07.641
               ID:2
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
00:07.655
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
              ID:6
00:07.663
               ID:1
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
00:07.679
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
              ID:3
00:07.682
               ID:7
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
00:07.712
               ID:10 broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
00:07.737
              ID:9
00:07.745
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
               ID:5
                     broadcast message received from 8.0 [1 times]: 'ID:8 packet[1]'
00:07.753
               ID:4
00:07.838
               ID:10 broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
00:07.852
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
               ID:8
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
00:07.862
               ID:9
00:07.871
              ID:5
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
00:07.879
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
              ID:4
00:07.890
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
               ID:2
00:07.906
              ID:6
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
00:07.928
              ID:3
00:07.931
               ID:7
                     broadcast message received from 1.0 [1 times]: 'ID:1 packet[1]'
00:08.180
                     broadcast message sent: packet[1]
               ID:3
00:08.213
               ID:10 broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
00:08.226
               ID:8
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
00:08.237
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
              ID:9
00:08.245
              ID:5
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
00:08.253
               ID:4
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
00:08.267
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
              ID:2
00:08.281
               ID:6
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
00:08.286
               ID:1
00:08.306
                     broadcast message received from 3.0 [1 times]: 'ID:3 packet[1]'
               ID:7
00:08.480
               ID:4
                     broadcast message sent: packet[1]
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
00:08.516
               ID:2
```

```
00:08.529
               ID:6
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
00:08.537
               ID:1
00:08.554
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
               ID:3
00:08.554
               ID:7
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
00:08.587
               ID:10 broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
00:08.603
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
               ID:8
00:08.615
              ID:9
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
00:08.620
              ID:5
                     broadcast message received from 4.0 [1 times]: 'ID:4 packet[1]'
                     broadcast message sent: packet[2]
00:09.567
              ID:9
00:09.602
               ID:8
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.618
               ID:5
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.627
              ID:4
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.640
               ID:2
00:09.654
               ID:6
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.662
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
               ID:1
00:09.678
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
               ID:7
                     broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.679
               ID:3
               ID:10 broadcast message received from 9.0 [2 times]: 'ID:9 packet[2]'
00:09.711
00:10.313
                     broadcast message sent: packet[2]
               ID:6
00:10.336
               ID:10 broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:10.352
              ID:8
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:10.363
              ID:9
00:10.369
              ID:5
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:10.377
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
               ID:4
00:10.391
               ID:2
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:10.412
               ID:1
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:10.429
               ID:3
00:10.432
              ID:7
                     broadcast message received from 6.0 [2 times]: 'ID:6 packet[2]'
00:11.116
               ID:1
                     broadcast message sent: packet[2]
00:11.139
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
              ID:2
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
00:11.156
              ID:6
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
00:11.178
               ID:3
00:11.180
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
               ID:7
00:11.211
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
               ID:10
00:11.227
               ID:8
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
```

```
00:11.238
              ID:9
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
00:11.243
              ID:5
00:11.252
                     broadcast message received from 1.0 [2 times]: 'ID:1 packet[2]'
              ID:4
00:11.681
              ID:10 broadcast message sent: packet[2]
00:11.727
              ID:8
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
00:11.738
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
              ID:9
00:11.746
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
              ID:5
00:11.754
              ID:4
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
00:11.765
              ID:2
00:11.782
              ID:6
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
00:11.784
              ID:1
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
00:11.803
              ID:3
                     broadcast message received from 10.0 [2 times]: 'ID:10 packet[2]'
00:11.806
              ID:7
00:12.511
              ID:5
                     broadcast message sent: packet[2]
00:12.538
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
              ID:1
00:12.554
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
              ID:3
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
00:12.557
              ID:7
00:12.587
              ID:10 broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
00:12.603
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
              ID:8
00:12.612
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
              ID:9
00:12.628
              ID:4
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
00:12.642
              ID:2
00:12.656
              ID:6
                     broadcast message received from 5.0 [2 times]: 'ID:5 packet[2]'
00:12.729
              ID:7
                     broadcast message sent: packet[2]
00:12.750
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
              ID:4
00:12.766
              ID:2
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
00:12.780
              ID:6
00:12.786
              ID:1
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
00:12.805
              ID:3
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
              ID:10 broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
00:12.835
00:12.852
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
              ID:8
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
00:12.862
              ID:9
00:12.871
                     broadcast message received from 7.0 [2 times]: 'ID:7 packet[2]'
              ID:5
00:13.236
              ID:2
                     broadcast message sent: packet[2]
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
00:13.281
              ID:6
```

```
00:13.286
              ID:1
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
00:13.303
              ID:3
00:13.306
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
              ID:7
00:13.336
              ID:10 broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
00:13.352
              ID:8
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
00:13.363
              ID:9
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
00:13.369
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
              ID:5
00:13.377
              ID:4
                     broadcast message received from 2.0 [2 times]: 'ID:2 packet[2]'
                     broadcast message sent: packet[2]
00:13.879
              ID:4
00:13.905
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
              ID:6
00:13.911
              ID:1
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
00:13.930
              ID:7
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
00:13.930
              ID:3
00:13.960
              ID:10 broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
00:13.976
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
              ID:8
00:13.987
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
              ID:9
00:13.995
              ID:5
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
                     broadcast message received from 4.0 [2 times]: 'ID:4 packet[2]'
00:14.015
              ID:2
                     broadcast message sent: packet[2]
00:14.666
              ID:8
              ID:10 broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:14.711
00:14.739
              ID:9
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:14.744
              ID:5
00:14.753
              ID:4
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:14.766
              ID:2
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:14.780
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
              ID:6
00:14.786
              ID:1
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:14.805
              ID:3
00:15.086
              ID:6
                     broadcast message sent: packet[3]
00:15.112
              ID:9
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
00:15.120
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
              ID:5
00:15.128
              ID:4
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
00:15.139
              ID:2
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
00:15.159
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
              ID:1
                     broadcast message received from 8.0 [2 times]: 'ID:8 packet[2]'
00:15.177
              ID:7
00:15.178
              ID:3
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
```

```
00:15.211
              ID:10 broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[3]'
00:15.227
              ID:8
00:15.770
                     broadcast message sent: packet[3]
              ID:9
00:15.805
              ID:3
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.805
              ID:7
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.835
              ID:10 broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.851
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
              ID:8
00:15.870
              ID:5
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.879
              ID:4
00:15.890
              ID:2
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.906
              ID:6
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
                     broadcast message received from 9.0 [3 times]: 'ID:9 packet[3]'
00:15.911
              ID:1
                     broadcast message sent: packet[2]
00:16.164
              ID:3
              ID:10 broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.210
00:16.214
              ID:10 broadcast message sent: packet[3]
00:16.226
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
              ID:8
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.237
              ID:9
00:16.246
              ID:5
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.254
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
              ID:4
00:16.265
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
              ID:2
00:16.281
              ID:6
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.284
              ID:1
00:16.306
              ID:7
                     broadcast message received from 3.0 [2 times]: 'ID:3 packet[2]'
00:16.405
              ID:6
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
00:16.411
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
              ID:1
00:16.430
              ID:3
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
00:16.433
              ID:7
00:16.477
              ID:8
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
00:16.488
              ID:9
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
00:16.496
              ID:5
00:16.504
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
              ID:4
                     broadcast message received from 10.0 [3 times]: 'ID:10 packet[3]'
00:16.515
              ID:2
                     broadcast message sent: packet[3]
00:16.808
              ID:5
                    broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
00:16.837
              ID:10
00:16.851
              ID:8
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
```

```
00:16.862
               ID:9
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
00:16.879
               ID:4
00:16.890
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
              ID:2
00:16.906
               ID:6
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
00:16.911
               ID:1
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
00:16.928
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
               ID:3
00:16.931
                     broadcast message received from 5.0 [3 times]: 'ID:5 packet[3]'
               ID:7
              ID:7
00:17.979
                     broadcast message sent: packet[3]
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.000
              ID:4
00:18.016
               ID:2
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.027
               ID:6
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.036
               ID:1
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.055
               ID:3
               ID:10 broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.085
00:18.102
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
               ID:8
00:18.112
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
               ID:9
00:18.121
               ID:5
                     broadcast message received from 7.0 [3 times]: 'ID:7 packet[3]'
00:18.858
              ID:1
                     broadcast message sent: packet[3]
00:18.879
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
              ID:4
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
00:18.890
               ID:2
00:18.906
              ID:6
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
00:18.928
               ID:3
00:18.931
               ID:7
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
00:18.961
               ID:10 broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
00:18.977
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
               ID:8
00:18.989
               ID:9
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
                     broadcast message received from 1.0 [3 times]: 'ID:1 packet[3]'
00:18.994
               ID:5
00:19.836
              ID:6
                     broadcast message sent: packet[4]
00:19.862
               ID:9
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
00:19.870
              ID:5
00:19.878
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
              ID:4
00:19.889
               ID:2
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
00:19.909
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
               ID:1
00:19.928
               ID:3
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
00:19.931
               ID:7
                     broadcast message received from 6.0 [3 times]: 'ID:6 packet[4]'
```

```
00:19.961
              ID:10 broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[4]'
00:19.977
              ID:8
00:20.103
                     broadcast message sent: packet[3]
              ID:2
00:20.129
              ID:4
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
00:20.156
              ID:6
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
00:20.159
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
              ID:1
00:20.178
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
              ID:3
00:20.181
              ID:7
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
              ID:10 broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
00:20.211
00:20.227
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
              ID:8
00:20.239
              ID:9
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
                     broadcast message received from 2.0 [3 times]: 'ID:2 packet[3]'
00:20.244
              ID:5
                     broadcast message sent: packet[4]
00:20.357
              ID:9
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
00:20.375
              ID:4
00:20.392
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
              ID:2
00:20.392
              ID:8
                     broadcast message sent: packet[3]
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
00:20.405
              ID:6
00:20.411
              ID:1
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
00:20.430
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
              ID:3
00:20.430
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
              ID:7
00:20.460
              ID:10 broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
00:20.477
              ID:8
00:20.493
              ID:5
                     broadcast message received from 9.0 [4 times]: 'ID:9 packet[4]'
00:20.556
              ID:7
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.587
              ID:10 broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.612
              ID:9
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.620
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
              ID:5
00:20.628
              ID:4
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.639
              ID:2
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.655
              ID:6
00:20.661
              ID:1
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
                     broadcast message received from 8.0 [3 times]: 'ID:8 packet[3]'
00:20.677
              ID:3
                     broadcast message sent: packet[4]
00:21.614
              ID:5
00:21.640
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
              ID:2
00:21.653
              ID:6
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
```

```
00:21.662
              ID:1
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
00:21.678
              ID:3
00:21.681
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
              ID:7
00:21.699
              ID:4
                     broadcast message sent: packet[3]
00:21.711
              ID:10 broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
00:21.727
              ID:8
00:21.738
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
              ID:9
00:21.752
              ID:4
                     broadcast message received from 5.0 [4 times]: 'ID:5 packet[4]'
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.853
              ID:8
00:21.861
              ID:9
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.867
              ID:5
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.891
              ID:2
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.905
              ID:6
00:21.911
              ID:1
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.930
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
              ID:3
00:21.930
                     broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
              ID:7
              ID:10 broadcast message received from 4.0 [3 times]: 'ID:4 packet[3]'
00:21.960
00:22.564
              ID:10 broadcast message sent: packet[4]
00:22.601
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
              ID:8
00:22.612
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
              ID:9
00:22.620
              ID:5
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
00:22.629
              ID:4
00:22.640
              ID:2
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
00:22.656
              ID:6
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
00:22.661
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
              ID:1
00:22.675
              ID:7
                     broadcast message sent: packet[4]
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
00:22.678
              ID:3
00:22.683
              ID:7
                     broadcast message received from 10.0 [4 times]: 'ID:10 packet[4]'
00:22.835
              ID:10 broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
00:22.851
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
              ID:8
00:22.862
              ID:9
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
00:22.870
              ID:5
00:22.879
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
              ID:4
00:22.890
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
              ID:2
00:22.906
              ID:6
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
```

```
00:22.912
              ID:1
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
                     broadcast message received from 7.0 [4 times]: 'ID:7 packet[4]'
00:22.928
              ID:3
00:23.202
                     broadcast message sent: packet[4]
              ID:1
00:23.228
              ID:8
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
00:23.239
              ID:9
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
00:23.245
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
              ID:5
00:23.253
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
              ID:4
00:23.266
              ID:2
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
00:23.280
              ID:6
00:23.305
              ID:7
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
00:23.305
              ID:3
                     broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
              ID:10 broadcast message received from 1.0 [4 times]: 'ID:1 packet[4]'
00:23.335
                     broadcast message sent: packet[3]
00:23.508
              ID:3
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
00:23.529
              ID:6
00:23.537
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
              ID:1
00:23.553
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
              ID:7
00:23.587
              ID:10 broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
00:23.603
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
              ID:8
00:23.614
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
              ID:9
00:23.620
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
              ID:5
00:23.628
              ID:4
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
                     broadcast message received from 3.0 [3 times]: 'ID:3 packet[3]'
00:23.641
              ID:2
00:24.669
              ID:9
                     broadcast message sent: packet[5]
00:24.708
              ID:10 broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
00:24.728
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
              ID:8
00:24.745
              ID:5
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
00:24.750
              ID:4
00:24.766
              ID:2
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
00:24.777
              ID:6
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
00:24.786
              ID:1
00:24.805
              ID:3
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
                     broadcast message received from 9.0 [5 times]: 'ID:9 packet[5]'
00:24.805
              ID:7
                     broadcast message sent: packet[4]
00:25.033
              ID:8
00:25.054
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
              ID:3
00:25.056
              ID:7
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
```

```
00:25.071
               ID:2
                     broadcast message sent: packet[4]
               ID:10 broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
00:25.086
00:25.112
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
               ID:9
00:25.120
               ID:5
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
00:25.128
               ID:4
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
00:25.139
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
               ID:2
00:25.155
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
              ID:6
00:25.161
               ID:1
                     broadcast message received from 8.0 [4 times]: 'ID:8 packet[4]'
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.405
              ID:6
00:25.411
               ID:1
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.427
               ID:3
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.430
              ID:7
               ID:10 broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.460
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.477
               ID:8
00:25.487
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
               ID:9
00:25.496
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
              ID:5
                     broadcast message received from 2.0 [4 times]: 'ID:2 packet[4]'
00:25.504
              ID:4
00:25.769
              ID:5
                     broadcast message sent: packet[5]
00:25.803
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
              ID:7
00:25.803
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
               ID:3
00:25.836
              ID:10 broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
00:25.853
               ID:8
00:25.864
              ID:9
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
00:25.877
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
              ID:4
00:25.891
               ID:2
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
00:25.905
               ID:6
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
                     broadcast message received from 5.0 [5 times]: 'ID:5 packet[5]'
00:25.910
               ID:1
00:26.031
              ID:6
                     broadcast message sent: packet[5]
00:26.055
               ID:3
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                     broadcast message received from 6.0 [4 times]: 'ID:6 packet[5]'
00:26.055
              ID:7
00:26.085
               ID:10 broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
00:26.101
               ID:8
00:26.112
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
               ID:9
00:26.120
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
               ID:5
00:26.129
               ID:4
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
```

```
00:26.140
              ID:2
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
                     broadcast message received from 6.0 [5 times]: 'ID:6 packet[5]'
00:26.159
              ID:1
00:26.559
                     broadcast message sent: packet[4]
              ID:4
00:26.585
              ID:10 broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.601
              ID:8
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.612
              ID:9
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.620
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
              ID:5
00:26.640
              ID:2
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.654
              ID:6
00:26.662
              ID:1
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.678
              ID:3
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
                     broadcast message received from 4.0 [4 times]: 'ID:4 packet[4]'
00:26.681
              ID:7
                     broadcast message sent: packet[5]
00:26.909
              ID:7
00:26.930
              ID:3
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:26.960
              ID:10 broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:26.976
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
              ID:8
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:26.987
              ID:9
00:26.995
              ID:5
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:27.003
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
              ID:4
00:27.014
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
              ID:2
00:27.031
              ID:6
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
                     broadcast message received from 7.0 [5 times]: 'ID:7 packet[5]'
00:27.036
              ID:1
00:27.939
              ID:10 broadcast message sent: packet[5]
00:27.976
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
              ID:8
00:27.987
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
              ID:9
00:27.995
              ID:5
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
00:28.004
              ID:4
00:28.015
              ID:2
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
00:28.031
              ID:6
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
00:28.036
              ID:1
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
00:28.053
              ID:3
                     broadcast message received from 10.0 [5 times]: 'ID:10 packet[5]'
00:28.055
              ID:7
                     broadcast message sent: packet[4]
00:28.423
              ID:3
00:28.460
                    broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
              ID:10
00:28.477
              ID:8
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
```

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00:28.487
              ID:9
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
00:28.496
              ID:5
00:28.504
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
              ID:4
00:28.515
              ID:2
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
00:28.531
              ID:6
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
00:28.534
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
              ID:1
00:28.556
                     broadcast message received from 3.0 [4 times]: 'ID:3 packet[4]'
              ID:7
00:29.116
              ID:1
                     broadcast message sent: packet[5]
00:29.140
              ID:2
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
00:29.156
              ID:6
00:29.178
              ID:3
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
00:29.181
              ID:7
              ID:10 broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
00:29.211
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
00:29.227
              ID:8
00:29.238
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
              ID:9
00:29.244
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
              ID:5
                     broadcast message received from 1.0 [5 times]: 'ID:1 packet[5]'
00:29.252
              ID:4
00:31.111
              ID:2
                     broadcast message sent: packet[5]
00:31.156
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
              ID:6
00:31.161
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
              ID:1
00:31.177
              ID:9
                     broadcast message sent: packet[6]
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
00:31.178
              ID:3
00:31.181
              ID:7
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
00:31.211
              ID:10 broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
00:31.227
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
              ID:8
00:31.238
              ID:9
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
00:31.243
              ID:5
00:31.248
              ID:5
                     broadcast message sent: packet[6]
00:31.252
              ID:4
                     broadcast message received from 2.0 [5 times]: 'ID:2 packet[5]'
00:31.279
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
              ID:6
00:31.287
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
              ID:1
00:31.304
              ID:3
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
00:31.307
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
              ID:7
00:31.337
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
              ID:10
00:31.353
              ID:8
                     broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
```

00:31.361	ID:9	broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
00:31.375	ID:4	broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
00:31.391	ID:2	broadcast message received from 5.0 [6 times]: 'ID:5 packet[6]'
00:31.411	ID:1	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.427	ID:3	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.430	ID:7	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.460	ID:10	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.477	ID:8	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.493	ID:5	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.501	ID:4	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.515	ID:2	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'
00:31.529	ID:6	broadcast message received from 9.0 [6 times]: 'ID:9 packet[6]'