How to interpret the NS2 tracefile (manually) for wireless simulation

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Assume you created a tcl file for a wireless simulation and it generates a trace file (usually .tr as extension). If any tracing softwares are not available, how to interpret manually, here is the step

```
ACTION: [s|r|D]: s -- sent, r -- received, D – dropped

WHEN: the time when the action happened

WHERE: the node where the action happened

LAYER: AGT -- application,

 RTR -- routing,
 LL  -- link layer (ARP is done here)
 IFQ -- outgoing packet queue (between link and mac layer)
 MAC -- mac,
 PHY – physical

flags:

SEQNO: the sequence number of the packet

TYPE: the packet type
  cbr -- CBR data stream packet
  DSR -- DSR routing packet (control packet generated by routing)
  RTS -- RTS packet generated by MAC 802.11
  ARP -- link layer ARP packet

SIZE: the size of packet at current layer, when packet goes down, size increases, goes
up size decreases
[a b c d]: a -- the packet duration in mac layer header
  b -- the mac address of destination
  c -- the mac address of source
  d -- the mac type of the packet body
```

flags:

```
[......]: [
  source node ip : port_number
  destination node ip (-1 means broadcast) : port_number
  ip header ttl
  ip of next hop (0 means node 0 or broadcast)
  ]
```

So we can interpret the below trace
s 0.0297823400 _1_ RTR --- 2012 cbr 32 [0 0 0 0] ------- [1:0 0:0 32 0]

as Application 0 (port number) on node 1 sent a CBR packet whose ID is 2012 and size is 32 bytes, at time 0.029 second, to application 0 on node 0 with TTL is 32 hops. The next hop is not decided yet.

And we can also interpret the below trace

```
r 0.010176954 _9_ RTR  --- 1 gpsr 29 [0 ffffffff 8 800] ------- [8:255 -1:255 32 0]
```

in the same way, as The routing agent on node 9 received a GPSR broadcast (mac address 0xff, and ip address is -1, either of them means broadcast) routing packet whose ID is 1 and size is 19 bytes, at time 0.010176954 second, from node 8 (both mac and ip addresses are 8), port 255 (routing agent).

This link has been taken for reference from

References:

https://ns-2.blogspot.com/2007/06/how-to-interprete-ns2-tracefile-for.html

https://www.nsnam.com/2010/11/how-to-interpret-ns2-tracefile-manually.html