Practical Extraction and Report for NS2

Dong Min Kim

Yonsei Univeristy

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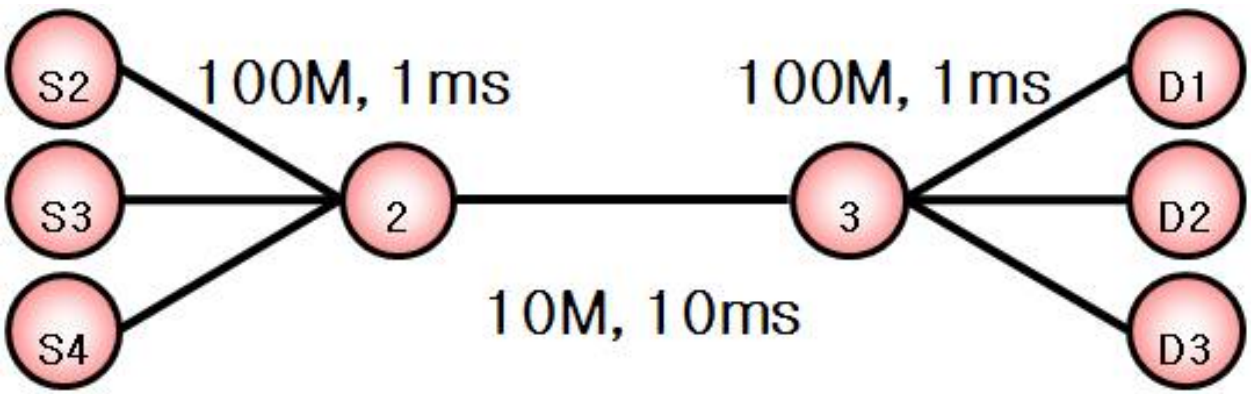
Topology

- All TCP flows start at 0 sec
- CBR flow 0 (4Mb, 1KB) starts at 1 sec
- CBR flow 1 (3Mb, 500B) starts at 2 sec
- CBR flow 1 ends at 3 sec
- Simulation ends at 4 sec

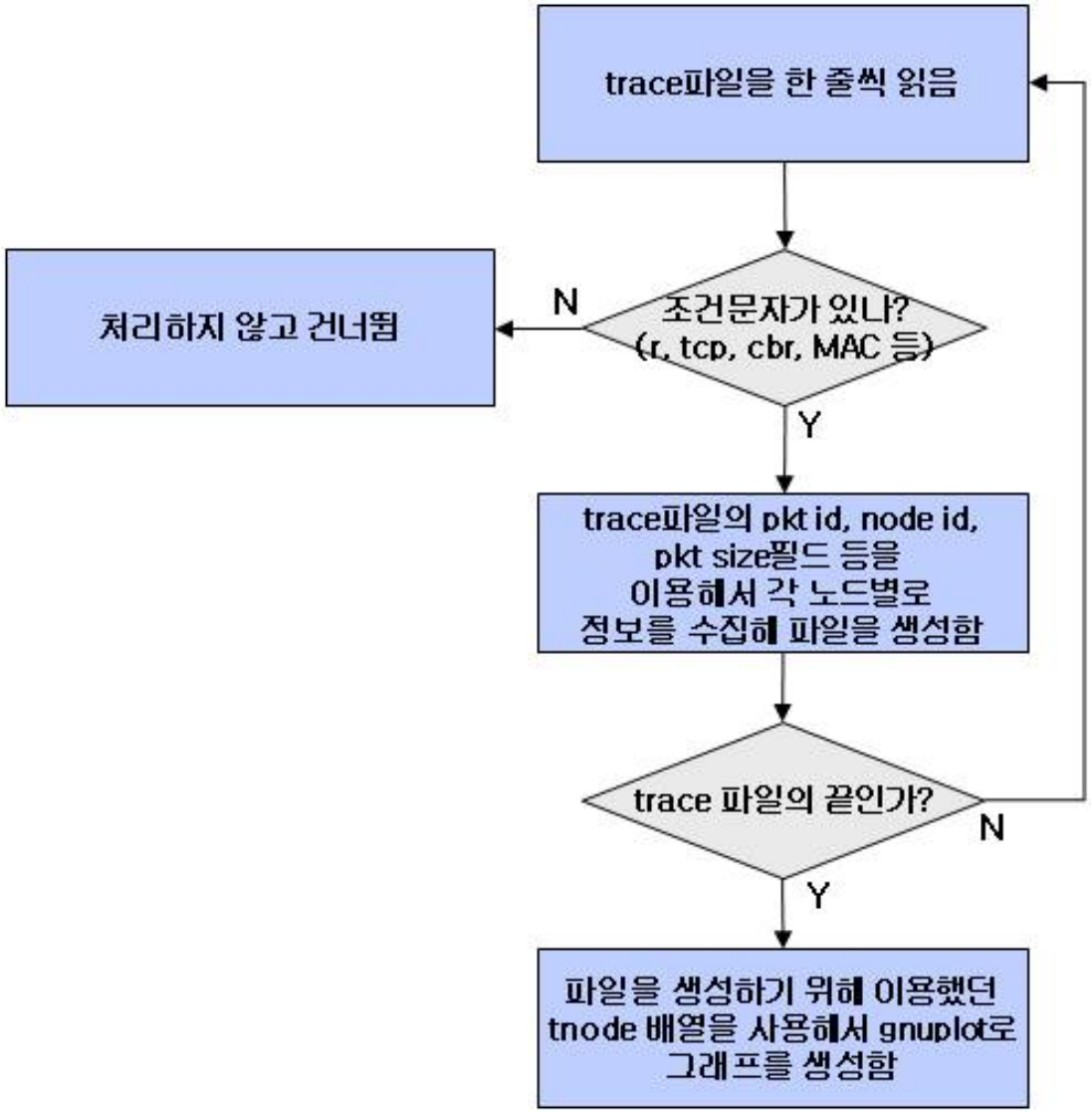


ns-2 Trace Analysis

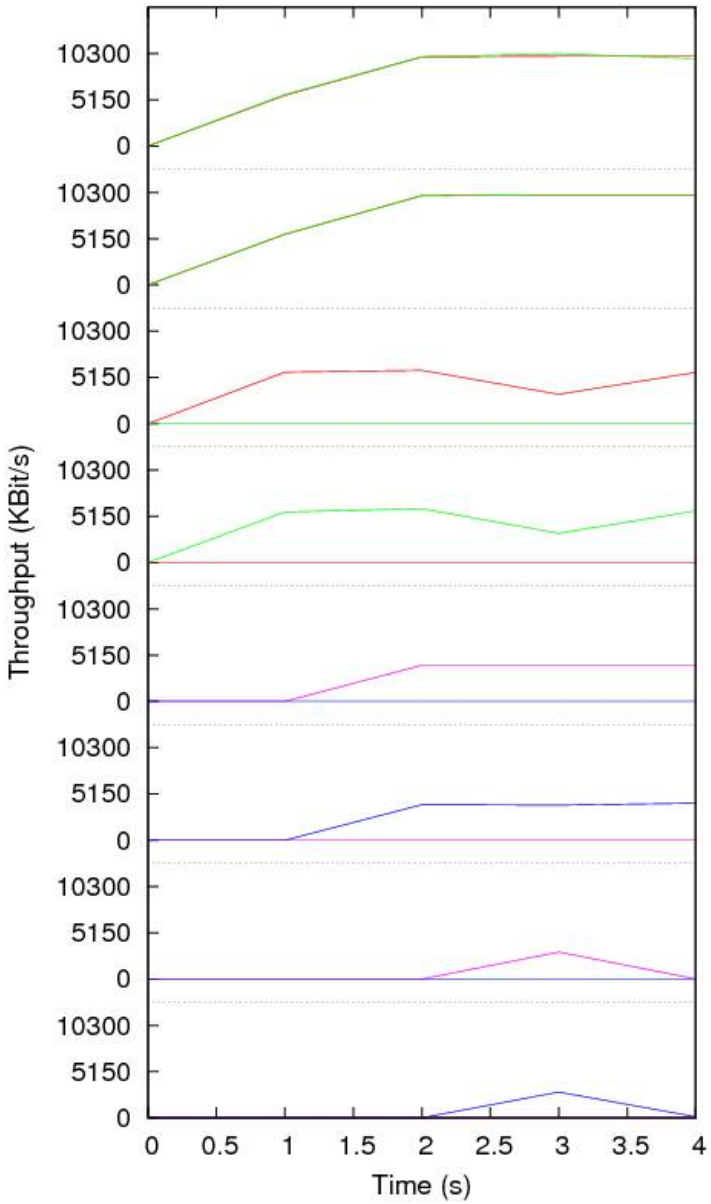
- event, time, from_node, to_node, pkt type, pkt size, flags, flowid, src_addr, dst_addr, seq_num, pkt_id
- Events:
  - r received at input interface
  - + enqueued into buffer
  - − dequeued from buffer; began to be transmitted to next hop
  - d dropped

```
+ 0 6 0 tcp 40 ------- 0 6.0 7.0 0 2
- 0 6 0 tcp 40 ------- 0 6.0 7.0 0 2
r 0.001032 2 0 tcp 40 ------- 0 2.0 3.0 0 0
+ 0.001032 0 1 tcp 40 ------- 0 2.0 3.0 0 0
- 0.001032 0 1 tcp 40 ------- 0 2.0 3.0 0 0
r 0.001032 4 0 tcp 40 ------- 0 4.0 5.0 0 1
```

node throughput

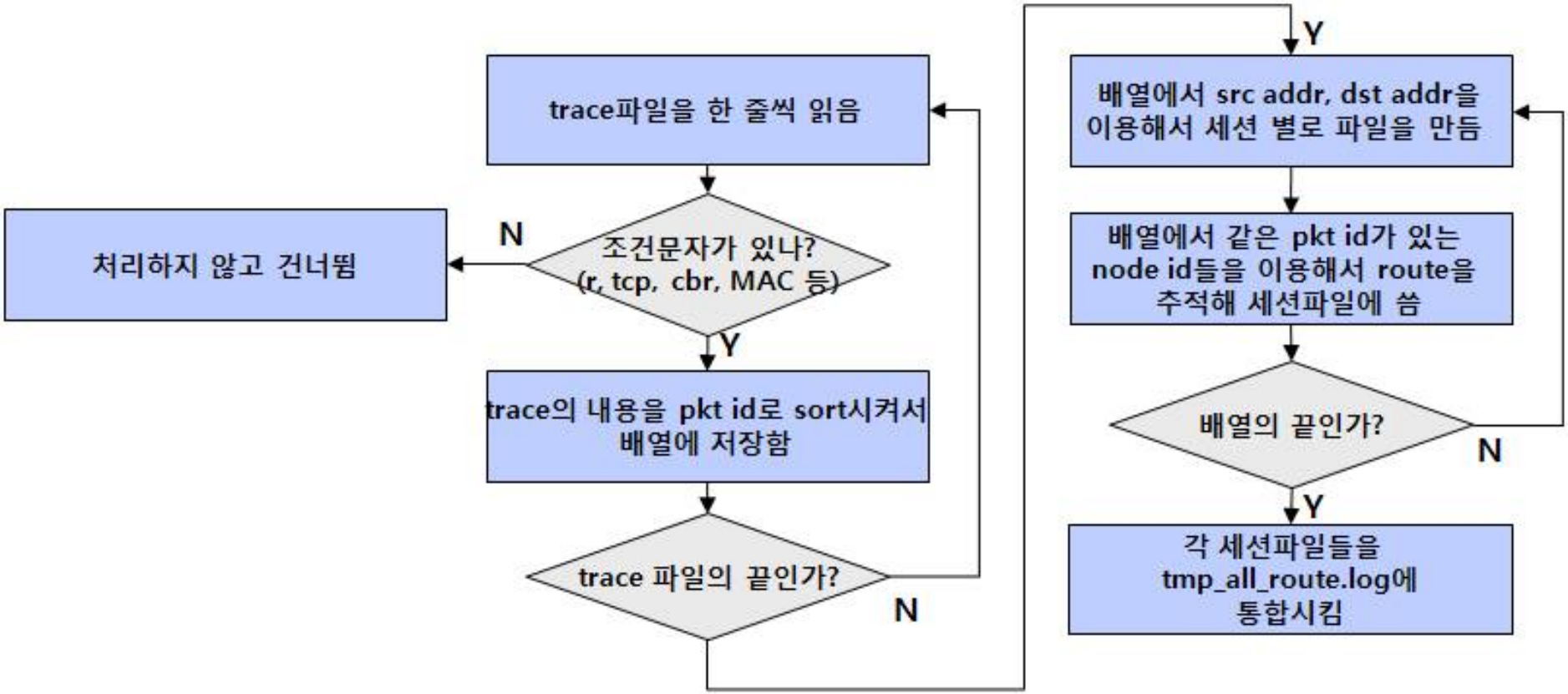


node throughput



route trace

- trace route from source to destination



route trace

- tmp_all_traffic.log

```
---------- orig_dest = 10_14 ------------------------------
event   Time          Node    Layer   PktID   PkType   Orig_Addr     -> Dest_Addr
s       1.049956117   _10_    MAC     0         tcp         10              -> 14
r       1.050852824   _6_     MAC     0         tcp         10              -> 14
r       1.052850946   _2_     MAC     0         tcp         10              -> 14
r       1.054789067   _8_     MAC     0         tcp         10              -> 14
r       1.057087188   _14_    MAC     0         tcp         10              -> 14

s       1.624304347   _10_    MAC     22        tcp         10              -> 14
r       1.633201054   _6_     MAC     22        tcp         10              -> 14

s       1.634343175   _10_    MAC     23        tcp         10              -> 14
r       1.643239882   _6_     MAC     23        tcp         10              -> 14
r       1.661842339   _12_    MAC     23        tcp         10              -> 14
r       1.691225474   _8_     MAC     23        tcp         10              -> 14
r       1.704159974   _9_     MAC     23        tcp         10              -> 14
r       1.714497474   _14_    MAC     23        tcp         10              -> 14
...
```

route trace

- open($filehandle, "filename")
- print filehandle, "bulabula"
- foreach (@arr)
- @entry = split(/[\s\(\)\[\]]+/, $line);
- while ($line = <infile>)
- if ($ARGV[0] =~ /^-[sS]/)

References

- http://www.informatik.uni-mannheim.de/pi4/projects/MobileIP/ns-extension/
- http://network.uos.ac.kr/~blhole/network/netsim/netsim.html
- 초보자를 위한 ns-2 시뮬레이션 단기강좌, 2008