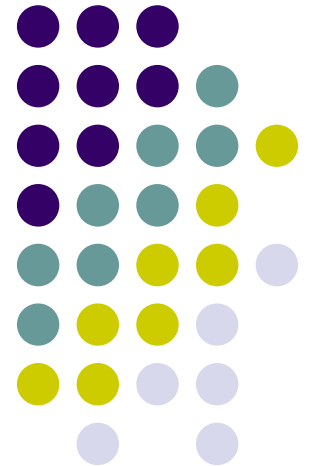


ssmping

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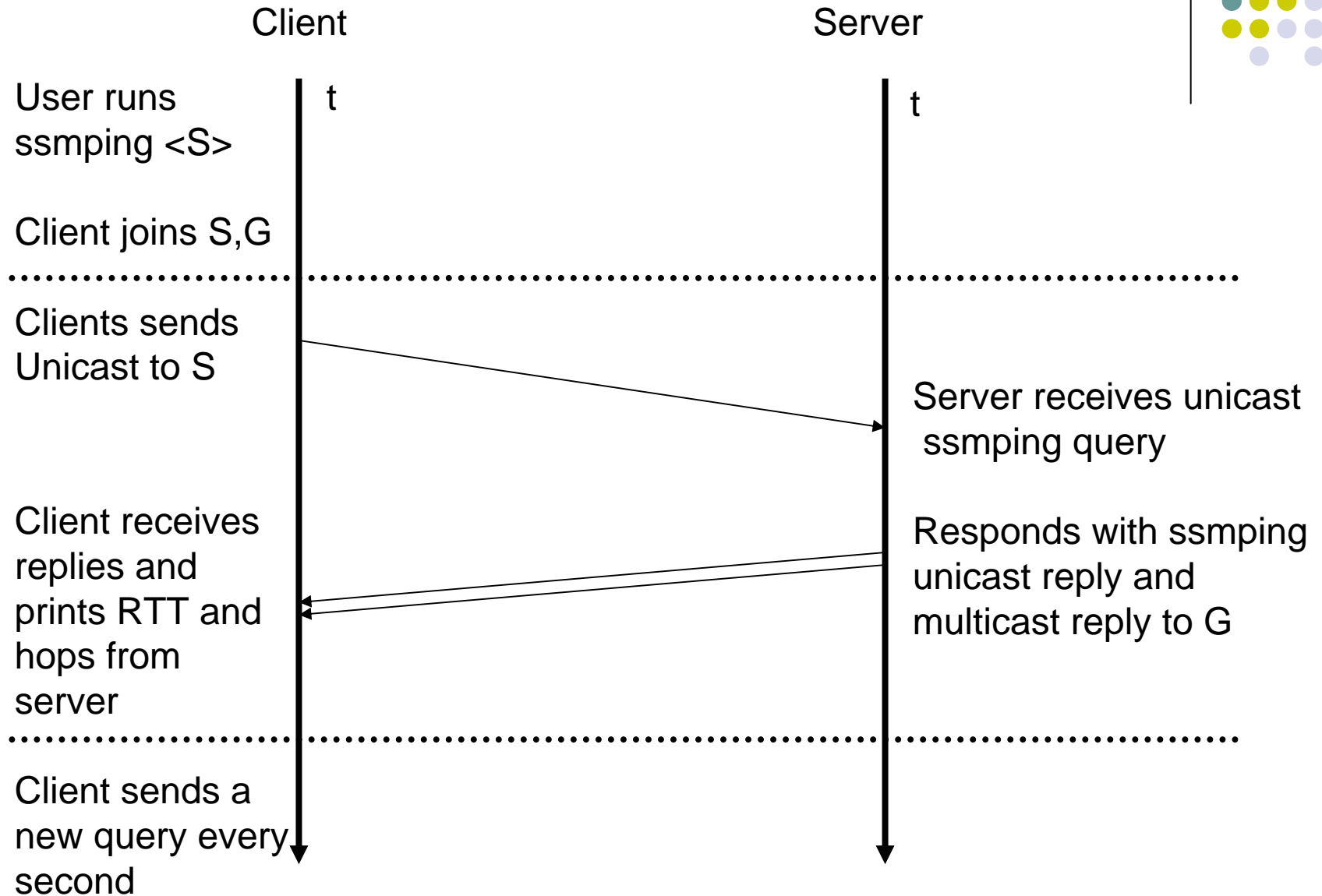
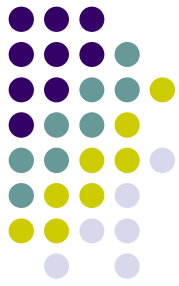


What is ssm ping?



- A tool for testing multicast connectivity
- Behaviour is a bit like normal ping
- A server must run ssm pingd
- A client can ping a server by sending unicast ssm ping query
- Server replies with both unicast and multicast ssm ping replies
- In this way a client can check that it receives SSM from the server
 - And also parameters like delay, number of router hops etc.

How it works

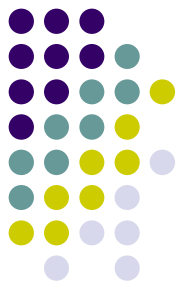


Example output



```
venaas@tcp4:~$ ./ssmping canet.u-strasbg.fr
ssmping joined (S,G) = (2001:660:4701:1001:2a0:d2ff:fe13:db12,ff3e::4321:1234)
pinging S from 2001:700:0:501:230:48ff:fe21:d839
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=0 dist=12 time=65.2ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=1 dist=12 time=65.2ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=2 dist=12 time=65.1ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=2 dist=13 time=71.9ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=3 dist=12 time=64.8ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=3 dist=13 time=69.8ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=4 dist=12 time=65.2ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=4 dist=13 time=69.6ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=5 dist=12 time=64.9ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=5 dist=13 time=70.2ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=6 dist=12 time=64.9ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=6 dist=13 time=70.3ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=7 dist=12 time=64.9ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=7 dist=13 time=70.3ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=8 dist=12 time=65.2ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=8 dist=13 time=70.3ms
  unicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=9 dist=12 time=64.8ms
multicast from 2001:660:4701:1001:2a0:d2ff:fe13:db12, seq=9 dist=13 time=71.7ms
```

Is it useful?



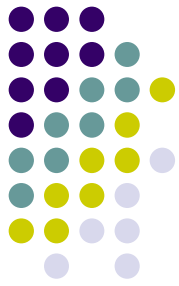
- I think it complements the beacons
- Useful for “end users” or others that want to perform a “one-shot” test rather than continuously running a beacon
- Are there other data than RTT and hops it should measure
 - Hops are measured by always using a ttl/hop count of 64 when sending replies
- It also gives a rough measure of how quickly the tree is built from receiver to source
- Would ASM ping be useful?
 - By checking ttl/hop count one might be able to measure when switching from PIM register to native from source to RP, and also when switching from shared to shortest path tree
 - Although one will need to know the network topology to interpret results

History



- Based on an idea by Pavan Namburi, Kamil Sarac University of Texas and Kevin C. Almeroth UCSB
 - <http://www.utdallas.edu/~ksarac/research/publications/draft-sarac-mping-00.txt>
 - <http://www.utdallas.edu/~ksarac/research/publications/CIIT04-1.pdf>
- Their idea is to extend IGMP/MLD
 - Not much interest in IETF so far
- This does some of the same, but doesn't require network support
 - Only uses UDP
 - But it requires server to run ssm pingd

Summary



- Tool and further documentation available from <http://www.venaas.no/multicast/ssmping/>
- Supports both IPv4 and IPv6
- Currently it works for Linux and FreeBSD. Probably also for other BSDs
- Solaris will be supported in a few days