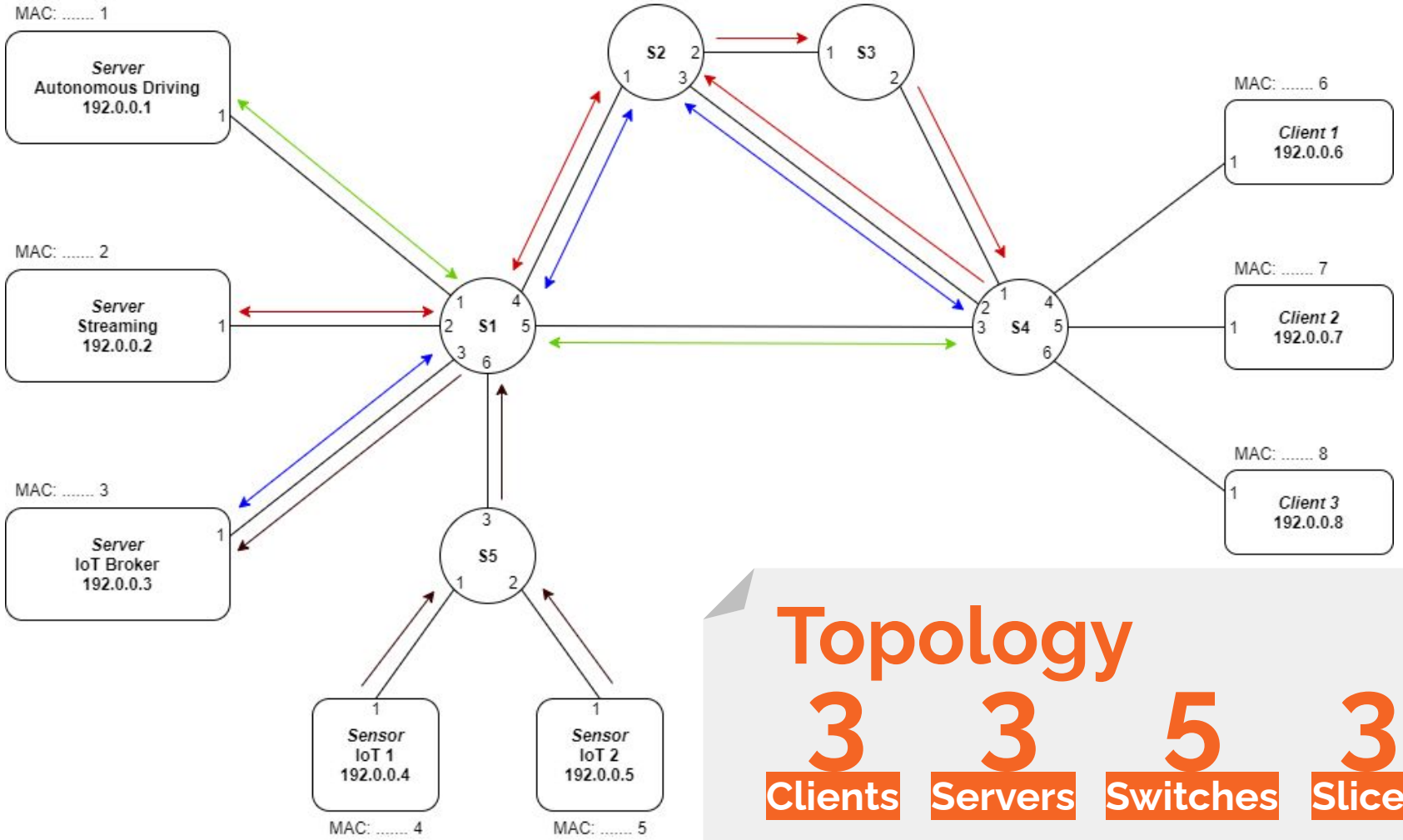
SDN Slicing in ComNetsEmu

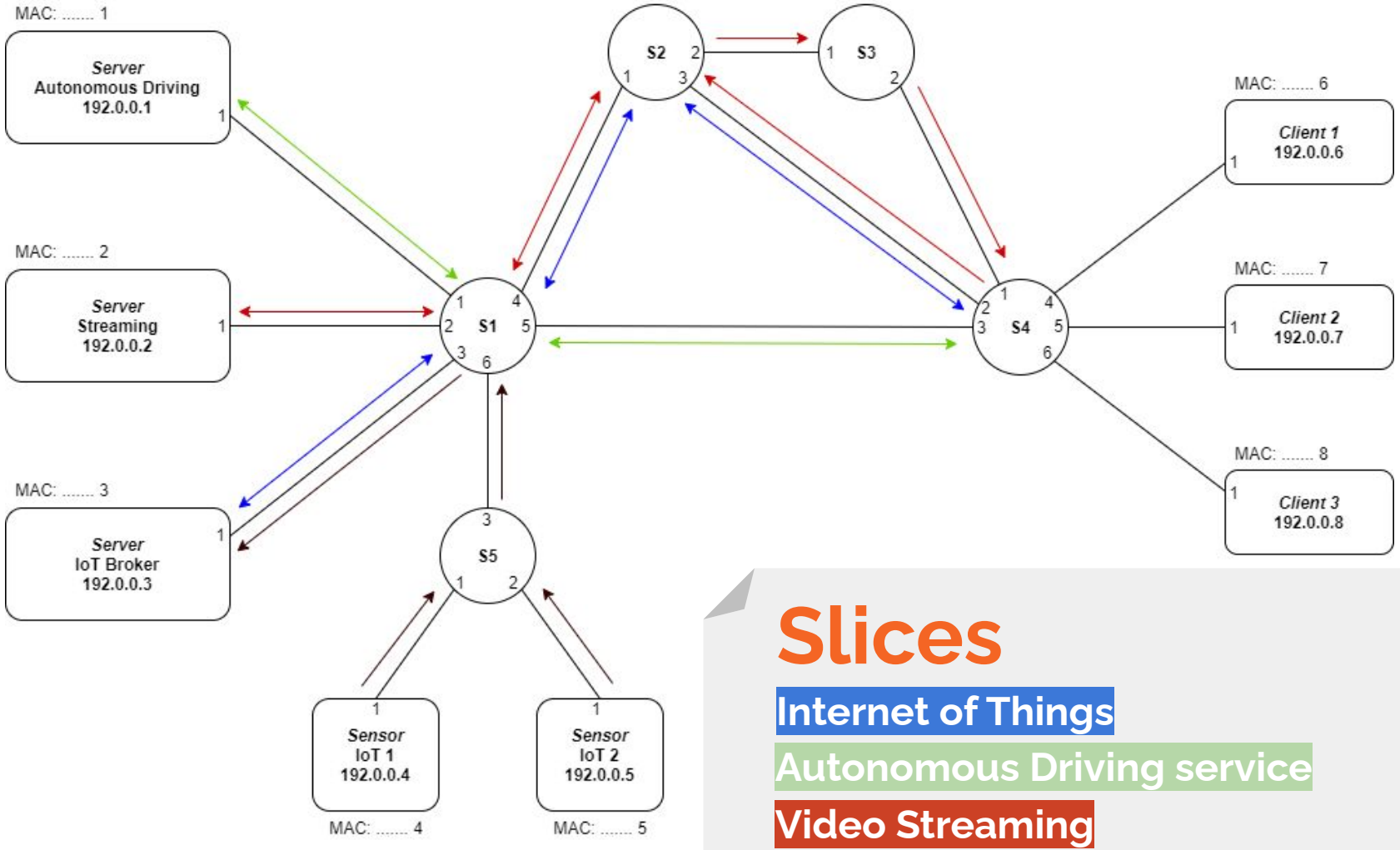
Softwarized and Virtualized Mobile Networks

Jacopo Barcellesi - Nicola Fiorello - Gianlorenzo Moser



Topology

3	3	5	3
Clients	Servers	Switches	Slices



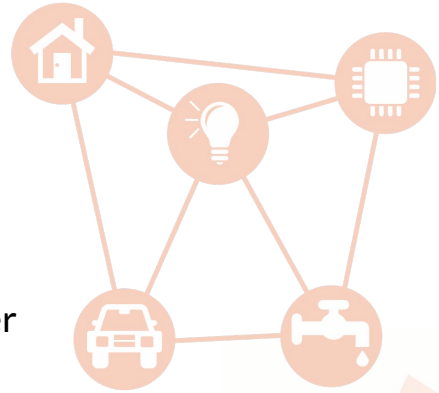
Slices

Internet of Things

Autonomous Driving service

Video Streaming

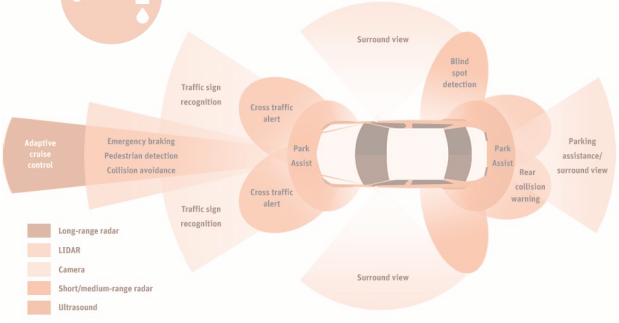
Slices



Internet of Things

- It does not require special performances
- Sensors can be reached directly only from the broker

Autonomous Driving service



- It works on dedicated paths to avoid congestion
- It is characterized by a very low latency
- It doesn't necessarily require a very broad band

Video Streaming

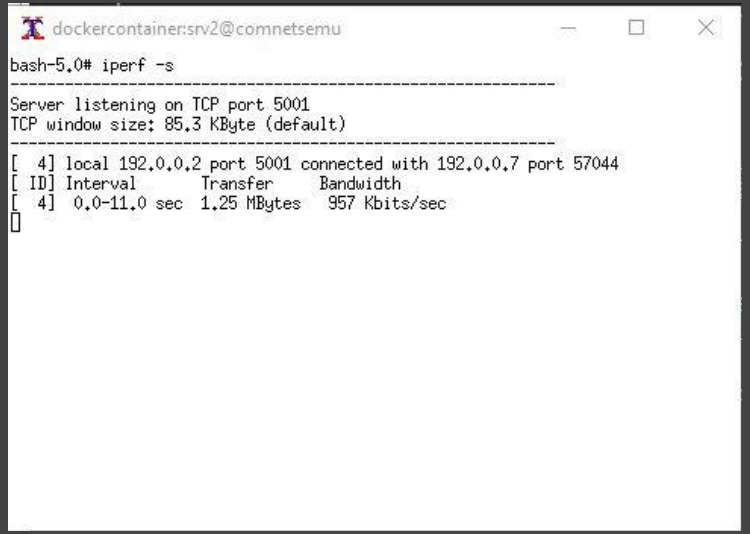
- Requires an important band for video transmission
- Latency is generally not critical
- The path differs in requests and responses (the former more sensitive to latency, the latter to the band)

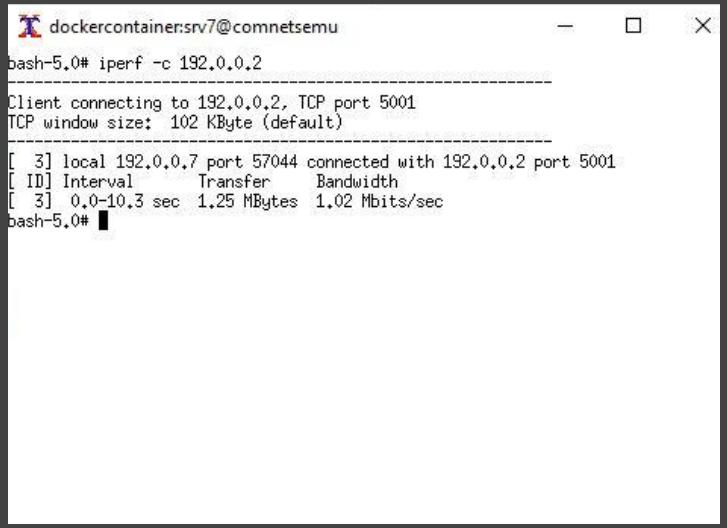
Ping

```
mininet> pingall
*** Ping: testing ping reachability
h1 -> h2 h3 X X h6 h7 h8
h2 -> h1 h3 X X h6 h7 h8
h3 -> h1 h2 h4 h5 h6 h7 h8
h4 -> X X h3 h5 X X X
h5 -> X X h3 h4 X X X
h6 -> h1 h2 h3 X X h7 h8
h7 -> h1 h2 h3 X X h6 h8
h8 -> h1 h2 h3 X X h6 h7
*** Results: 35% dropped (36/56 received)
```

iperf

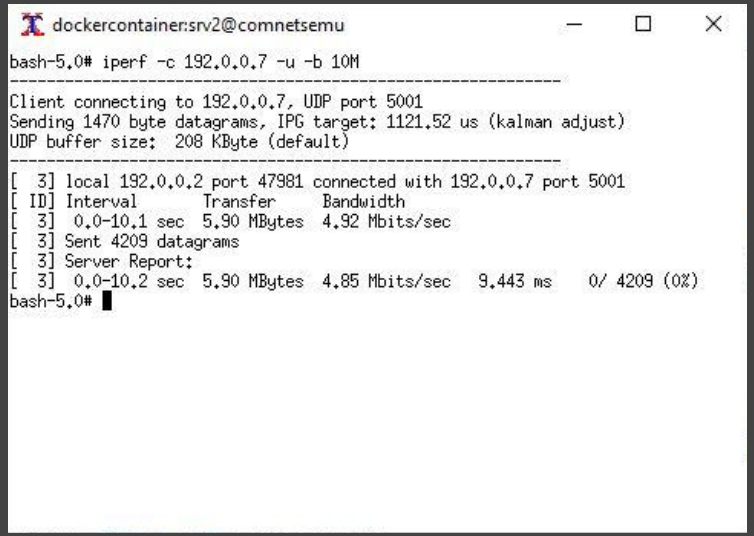
Internet of Things

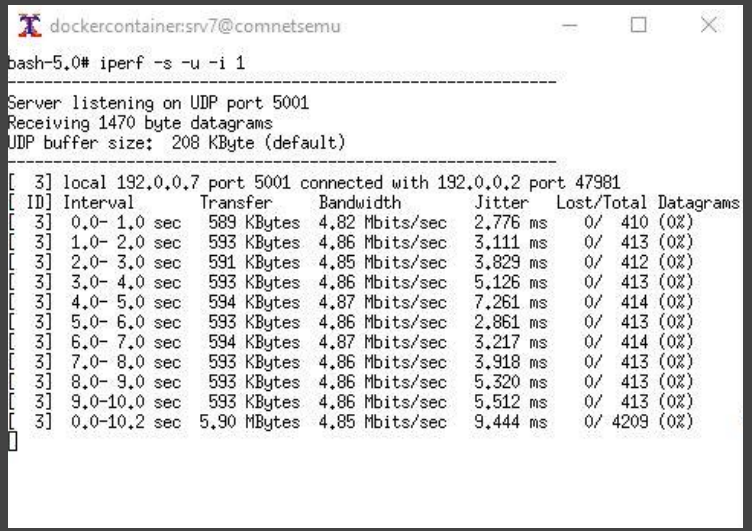




iperf

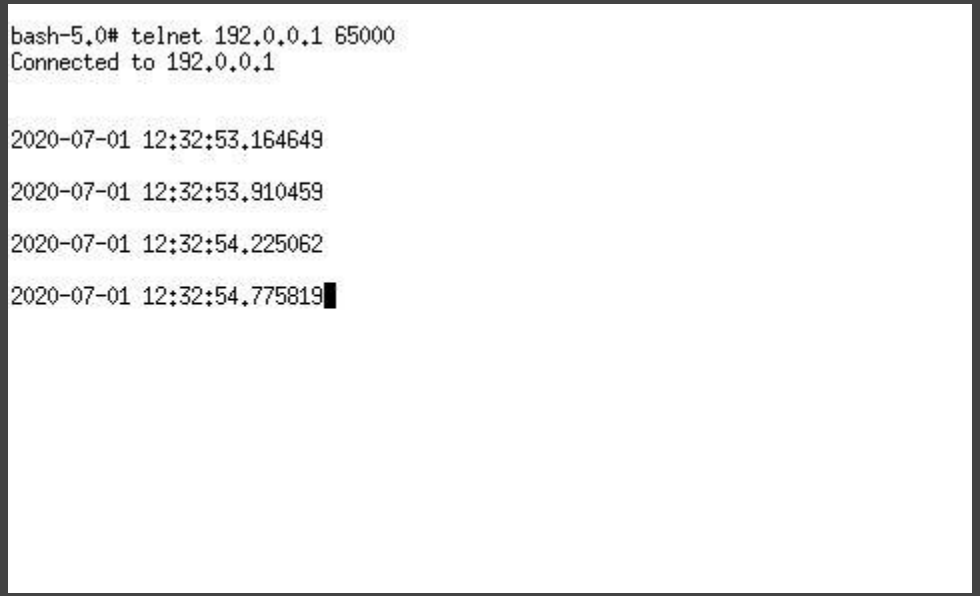
Video Streaming





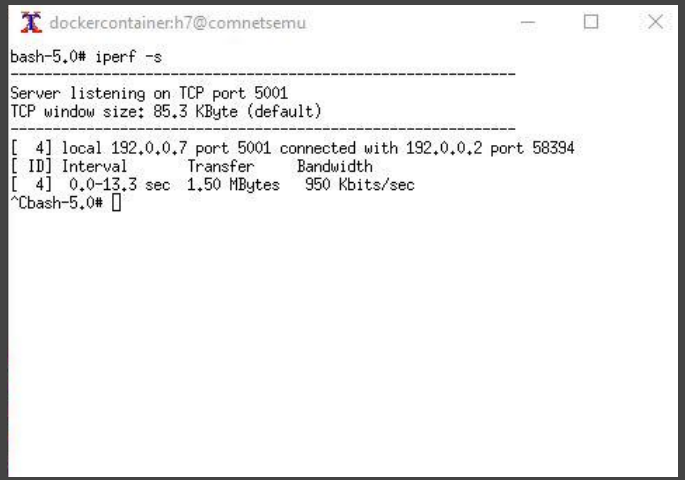
telnet

Autonomous Driving service



Slicing

Test of Reachability



WHAT IS NEXT?

future developments and open points

1

IoT Support

There is no integration with docker images

2

Queue integration

Ryu manager vs Open vSwitch