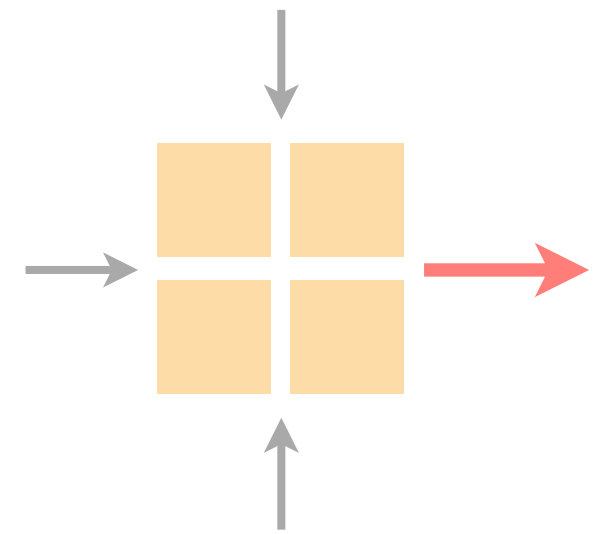


Communication Networks

Spring 2026



Slides adapted from Coralie Busse-Grawitz



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ETH Zürich
26 Feb 2026

A typical exercise session

Time to solve the exercise

we are also available on Element/email

A typical exercise session

Brief presentation

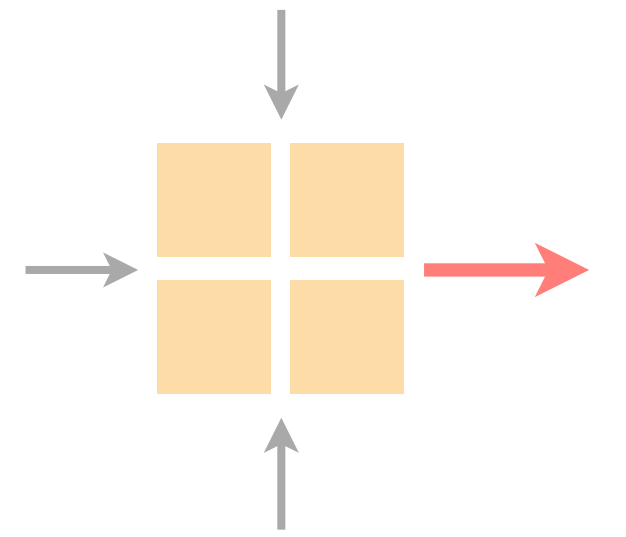
elaborate on topics/questions

Time to solve the exercise

we are also available on Element/email

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Important network tools

Time to solve the exercise

Important network tools

Is a destination reachable?

ping

What is the path to the dst?

tracert

What is the IP of a domain?

dig

What packets does a device send?

Wireshark

Important network tools

Is a destination reachable?

ping

What is the path to the dst?

tracert

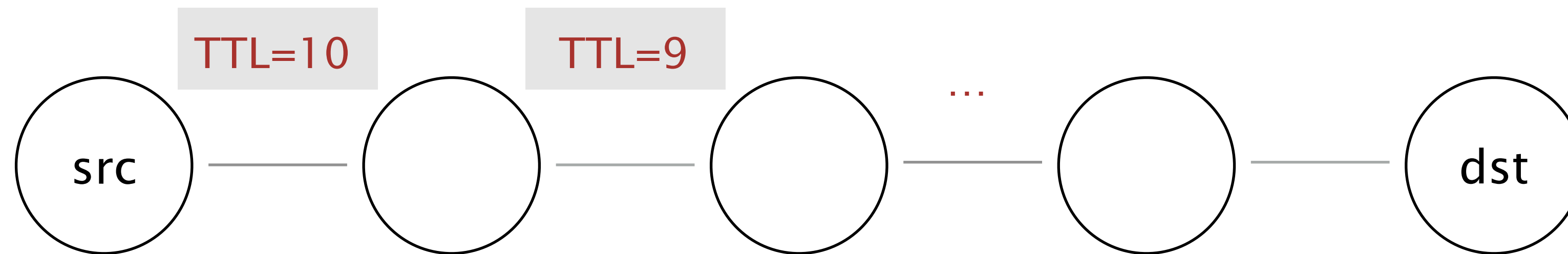
What is the IP of a domain?

dig

What packets does a device send?

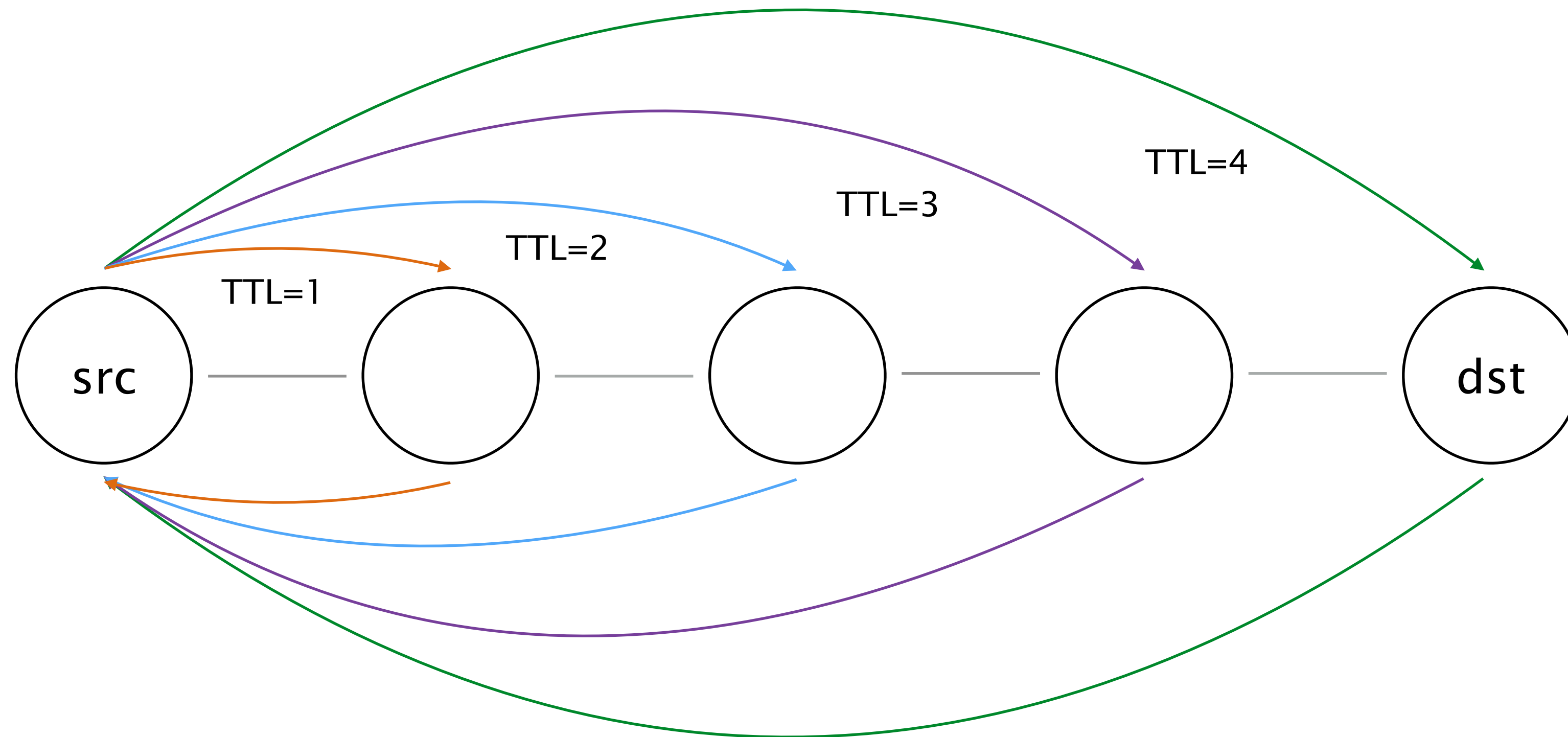
Wireshark

traceroute relies on the Time-To-Live (TTL) field which decreases by 1 per hop/router



traceroute finds the path

thanks to expiring TTLs of *multiple* packets

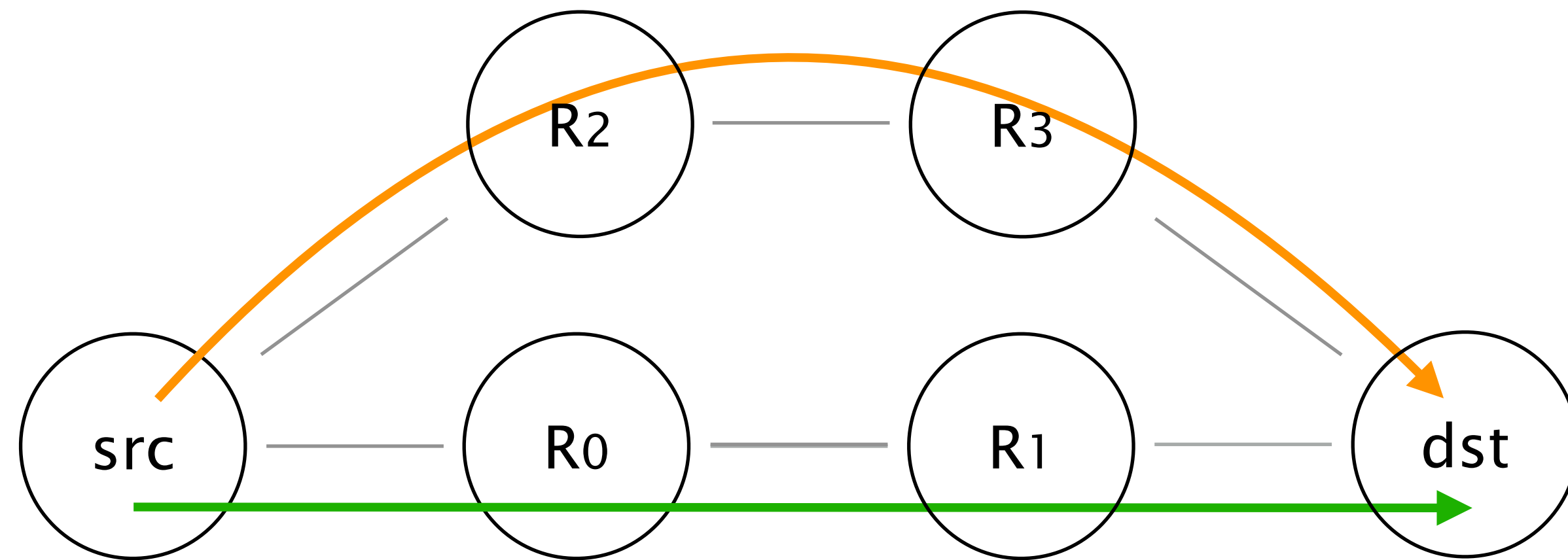


traceroute has some “issues”

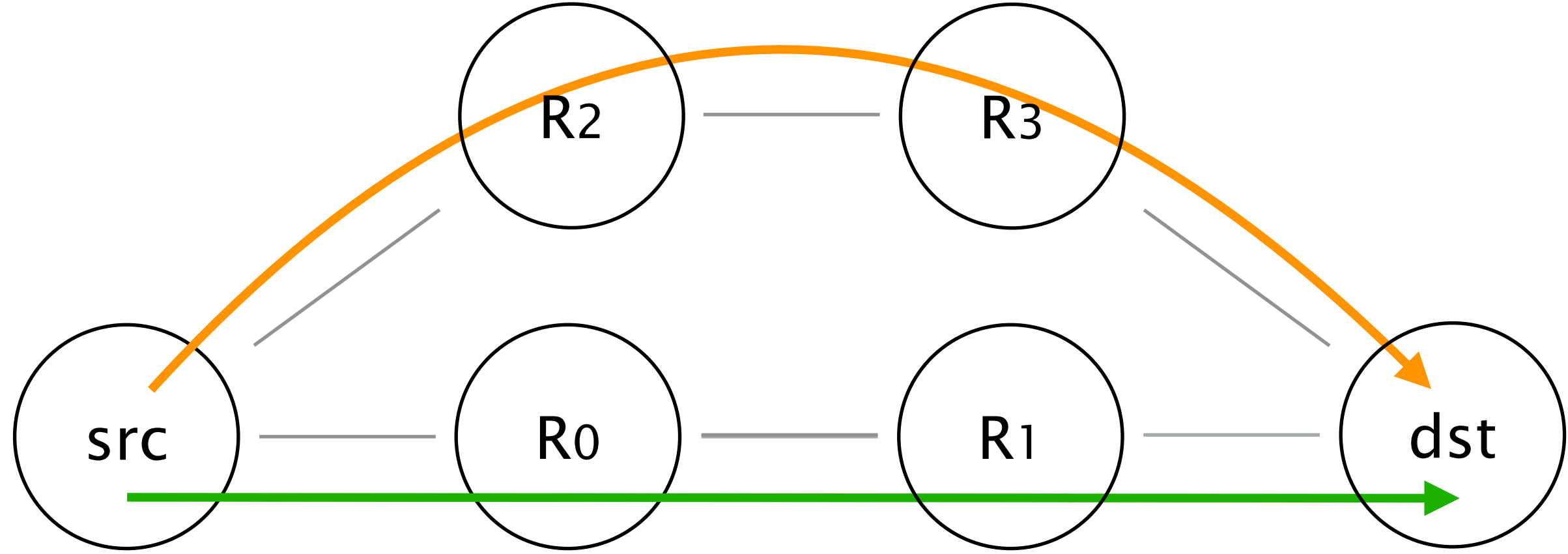
answers to probes are not guaranteed

output may not show a single path

If there are multiple parallel paths between src and dst, traceroute output may show either or a mix of them



If there are multiple parallel paths between src and dst, traceroute output may show either or a mix of them



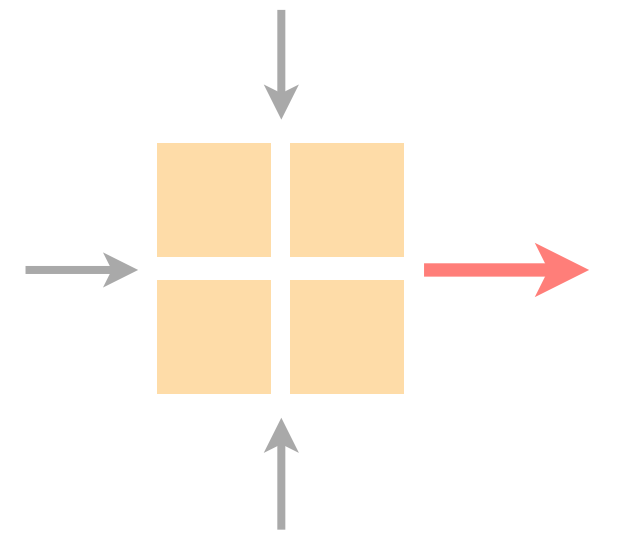
```
src ~ $ traceroute dst  
1 R0 10 ms  
2 R1 20 ms  
3 dst 30 ms
```

```
src ~ $ traceroute dst  
1 R2 10 ms  
2 R3 20 ms  
3 dst 30 ms
```

```
src ~ $ traceroute dst  
1 R0 10 ms  
2 R3 20 ms  
3 dst 30 ms
```

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Important network tools

Time to solve the exercise