

Communication Networks

Spring 2020 — Exercise Session 6



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ETH Zürich (D-ITET)

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Communication Networks

This Exercise Session



Overview of the current assignment

Tips routing project

Solve theoretical questions and/or routing project

Solutions will be published next week

Communication Networks

This Exercise Session



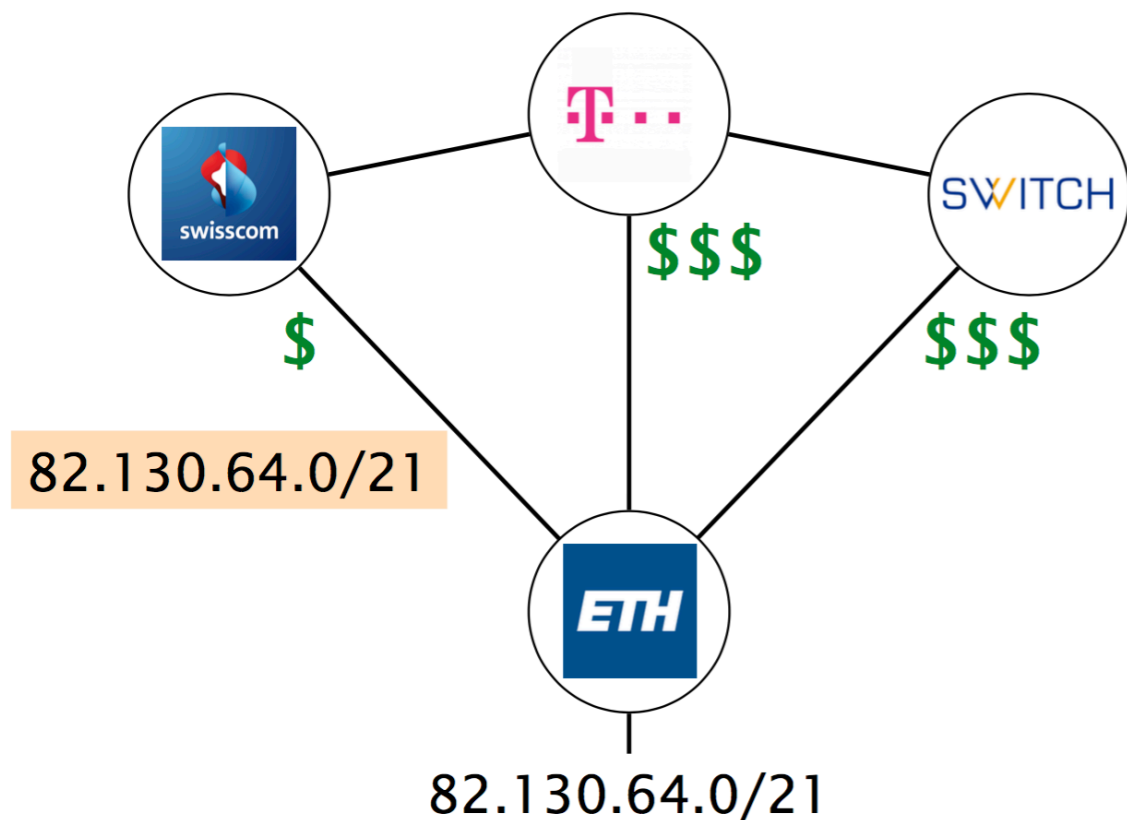
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Task 6.1: Traffic Engineering



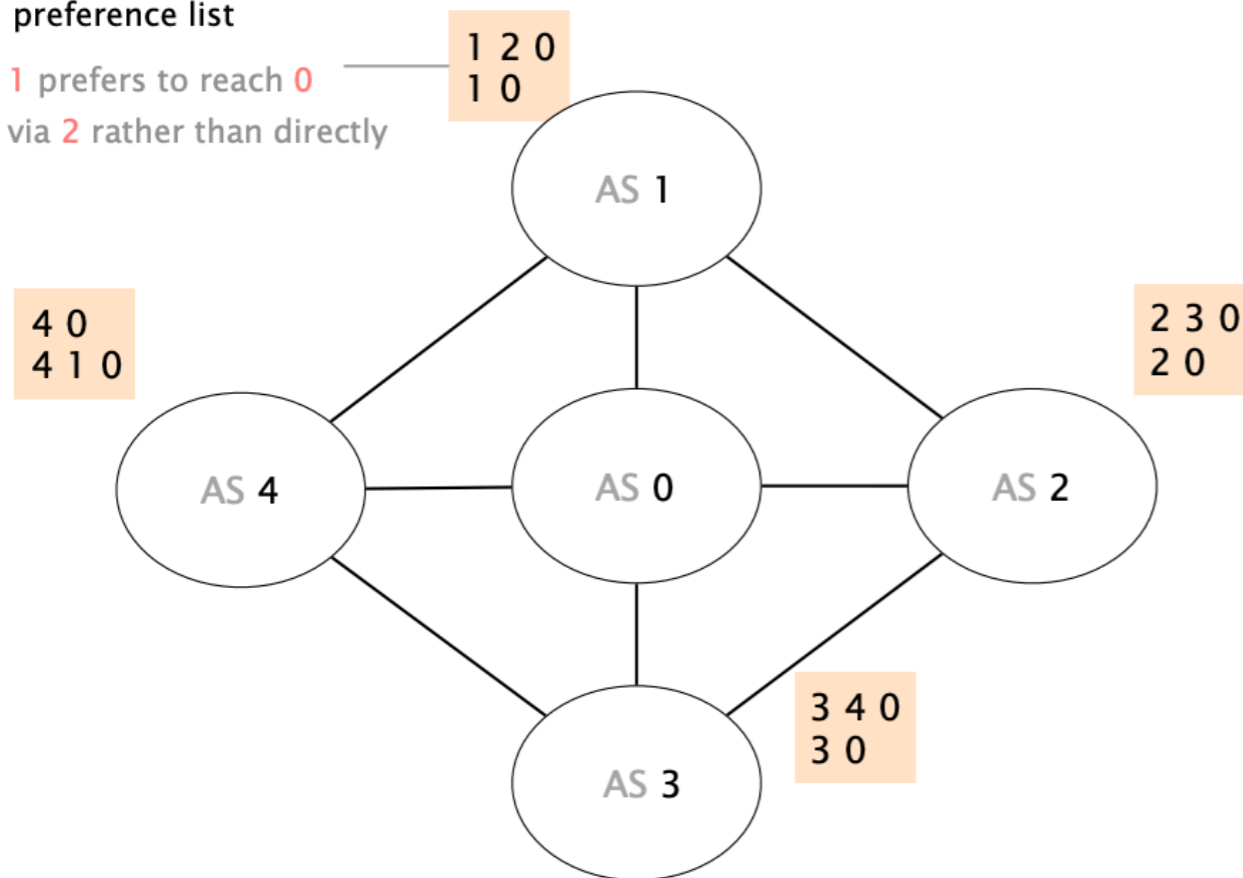
ETH only wants to use the cheapest provider

Inbound traffic engineering

Task 6.2: Convergence

preference list

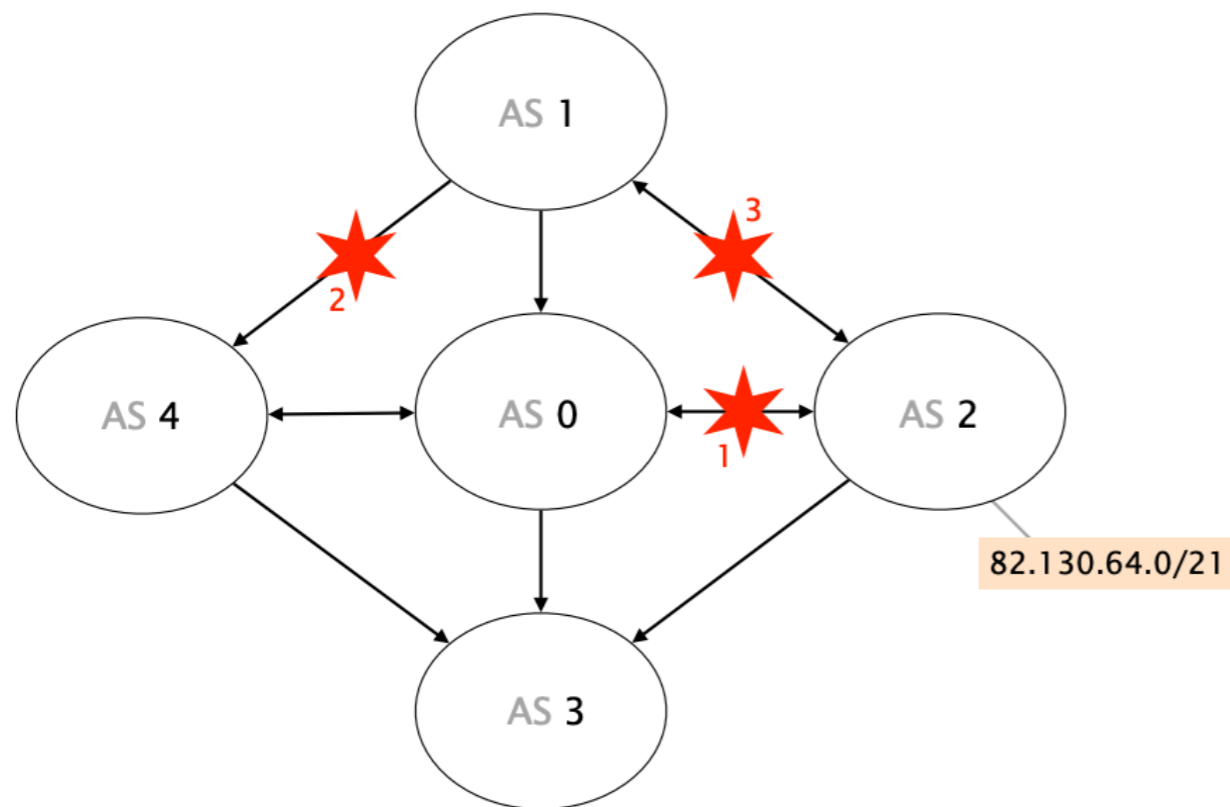
1 prefers to reach 0
via 2 rather than directly



Does this network converge?

No customer-provider or peer-to-peer policies

Task 6.3: Not-so-reliable Internet



Same network, but with policies and link failure

What BGP messages do ASes exchange when?
UPDATE, WITHDRAW, ...

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Useful commmands

After each route-map change: `clear ip bgp *`

List all routes matching a specific route-map:

```
show ip bgp route-map <NAME>
```

Routes with a specific community-value:

```
show ip bgp community <A:B>
```

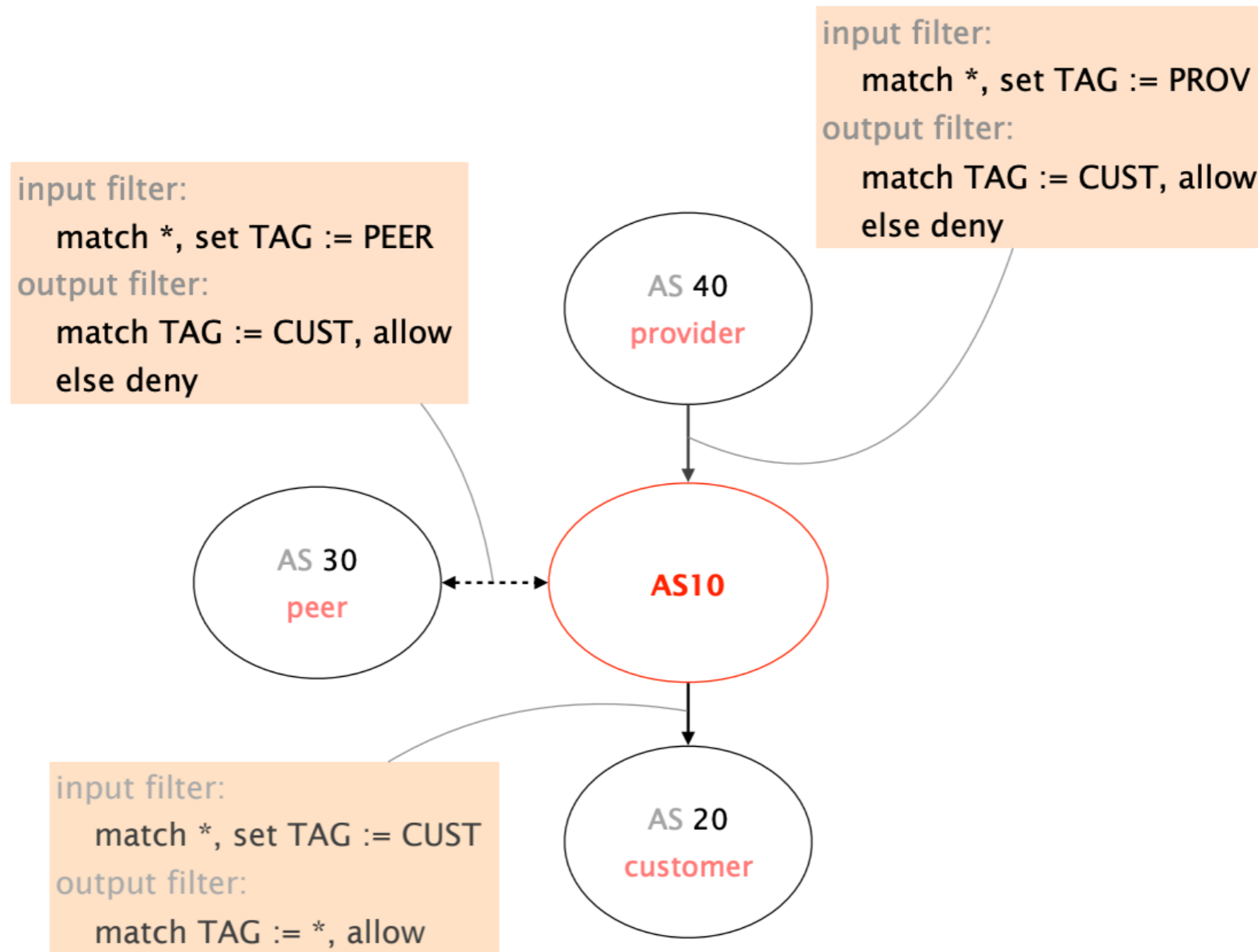

Please note

Your own prefix should be advertised to **all** neighbors even if you implement policies.

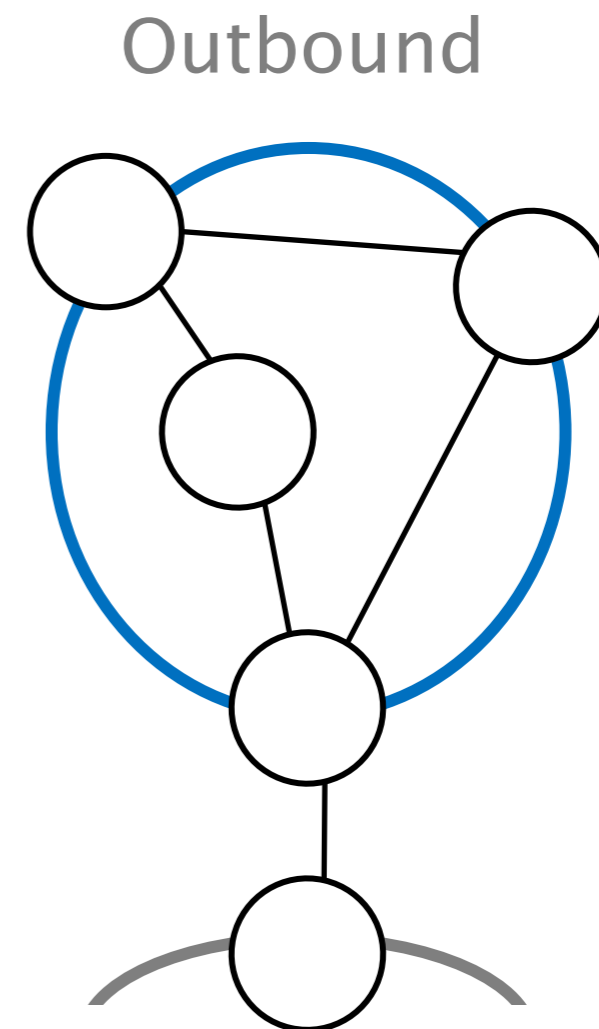
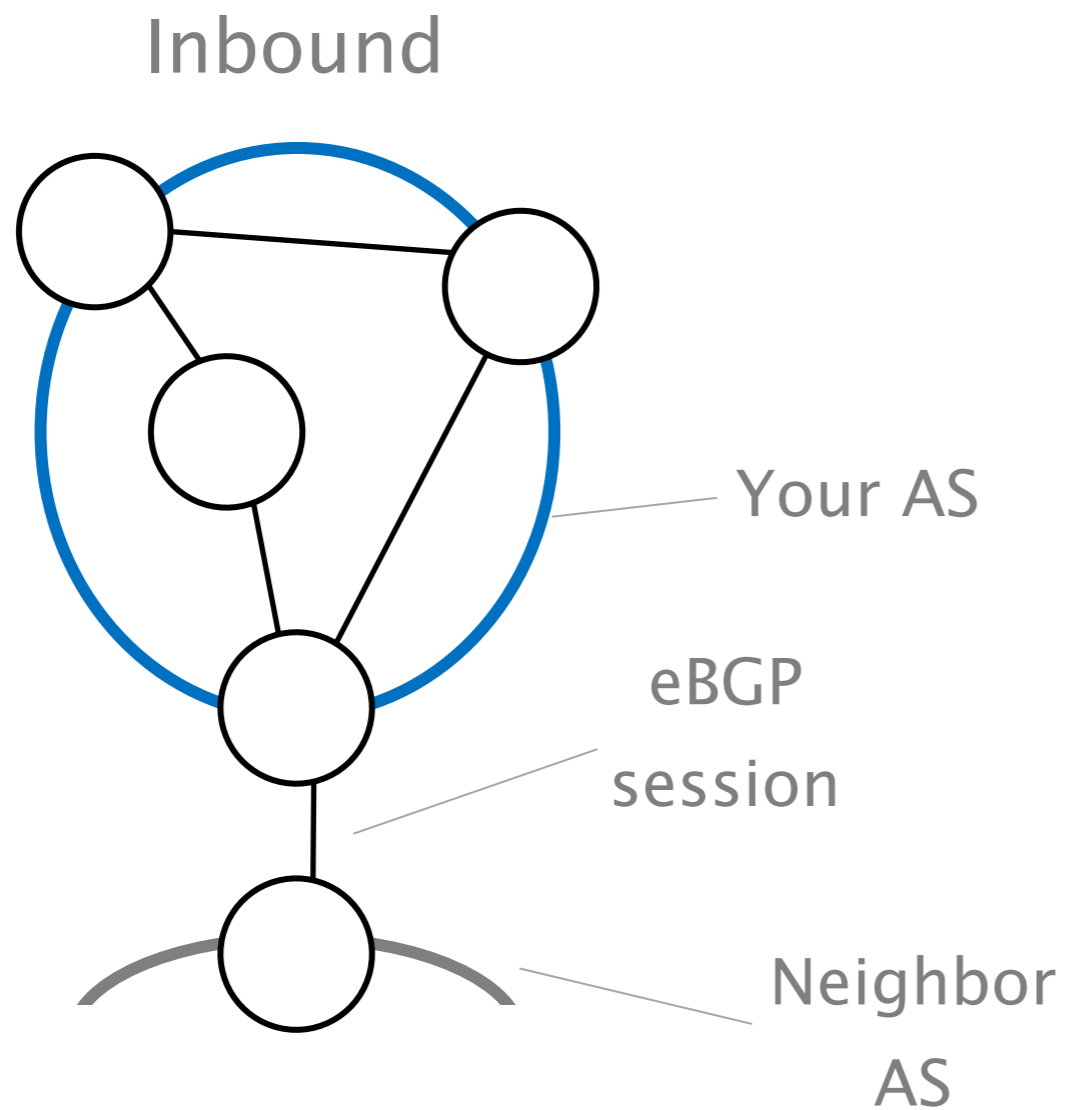
Use the advertisements of the stub ASes to test your configuration for question 3.2.

If you cannot show something due to problems of your neighbors, note it in the report (no influence on your grade).

For question 3.1 have a look at the lecture slides

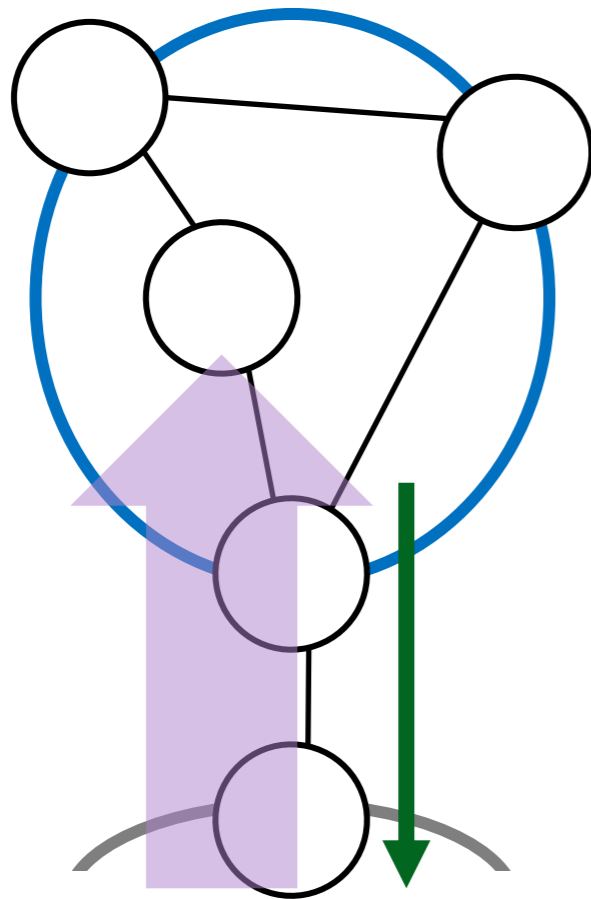


Influence inbound and outbound traffic

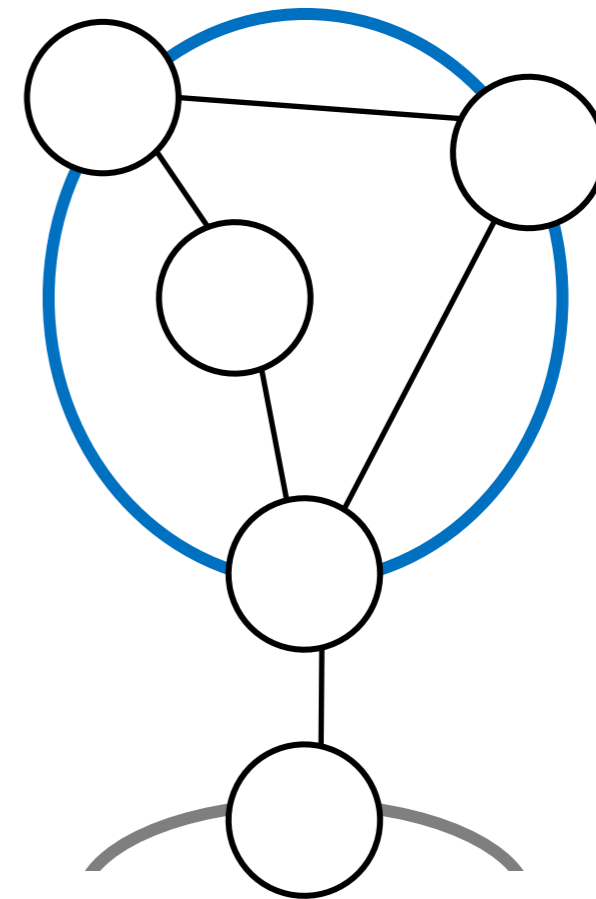




Influence inbound and outbound traffic

Inbound



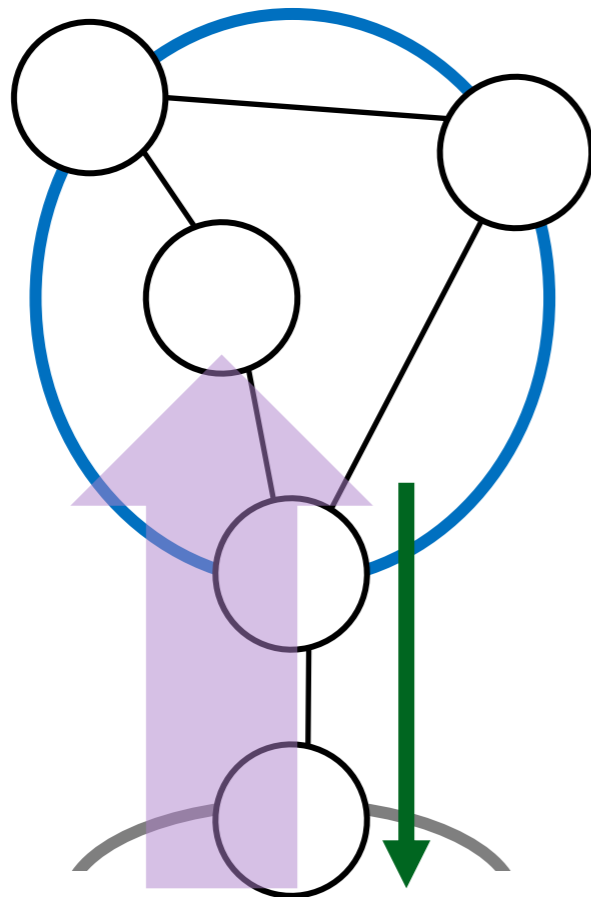
Outbound



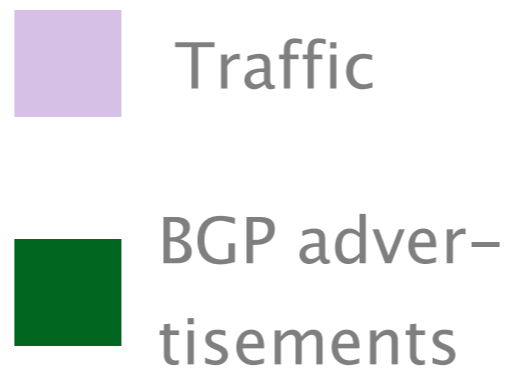
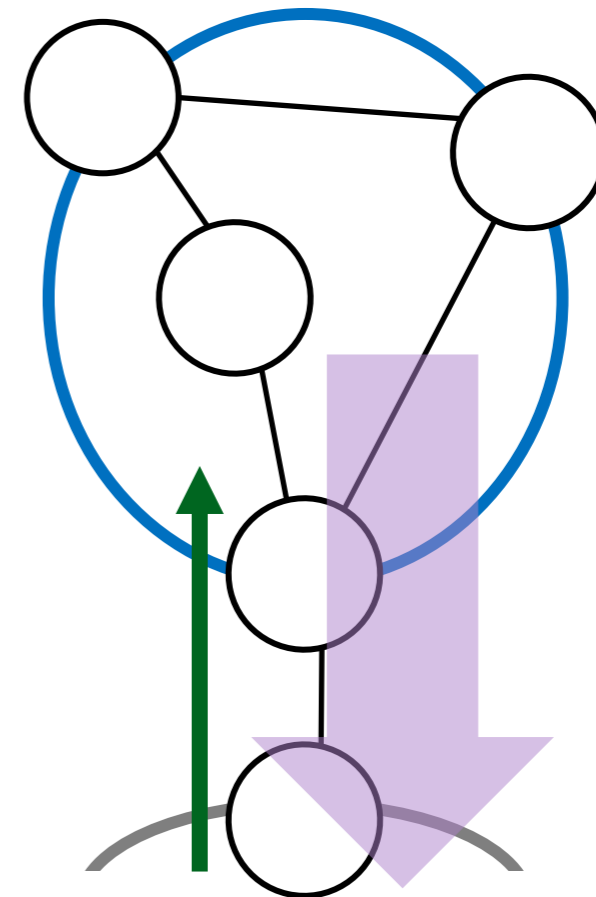
-  Traffic
-  BGP advertisements

Influence inbound and outbound traffic

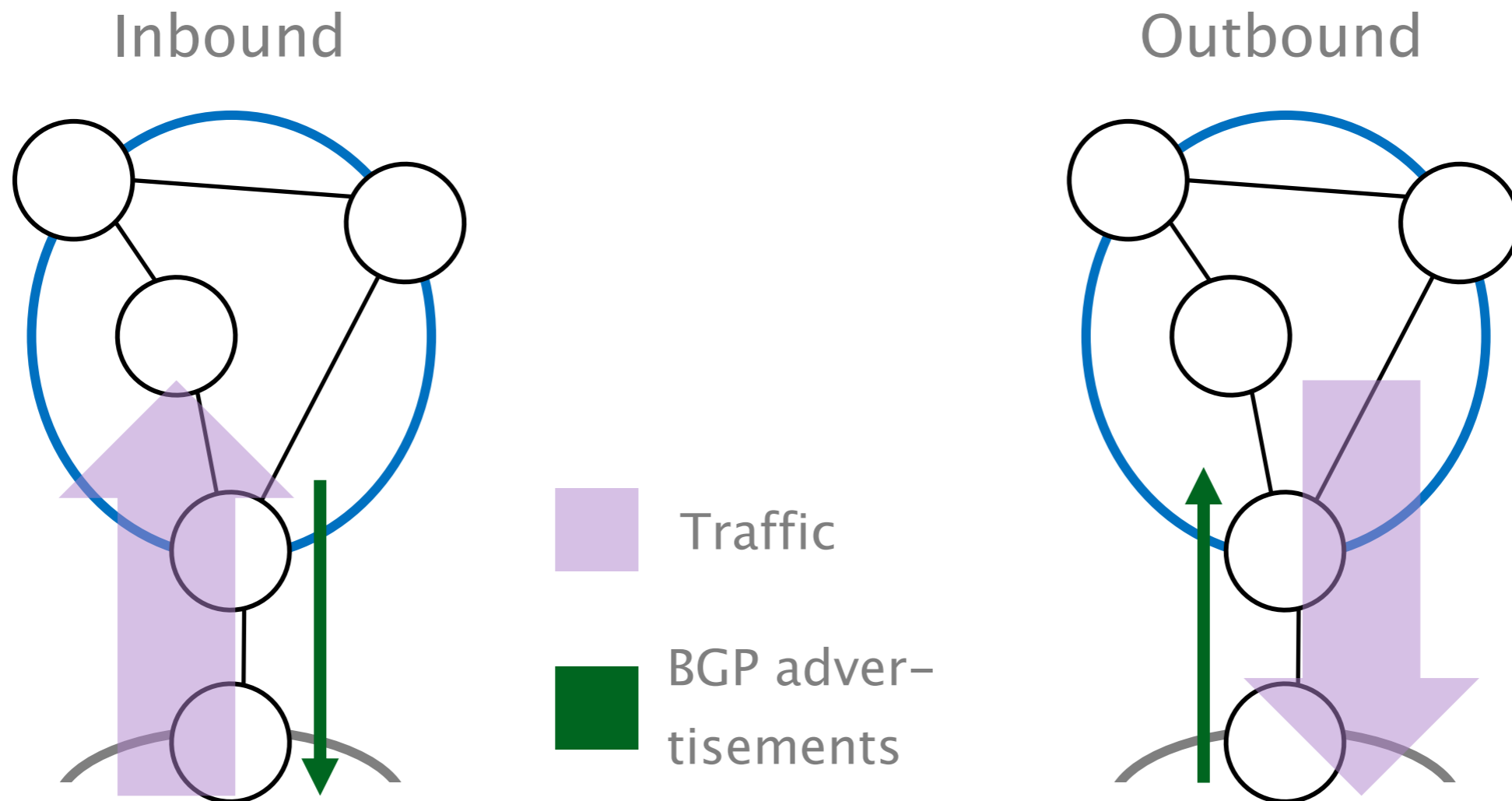
Inbound



Outbound

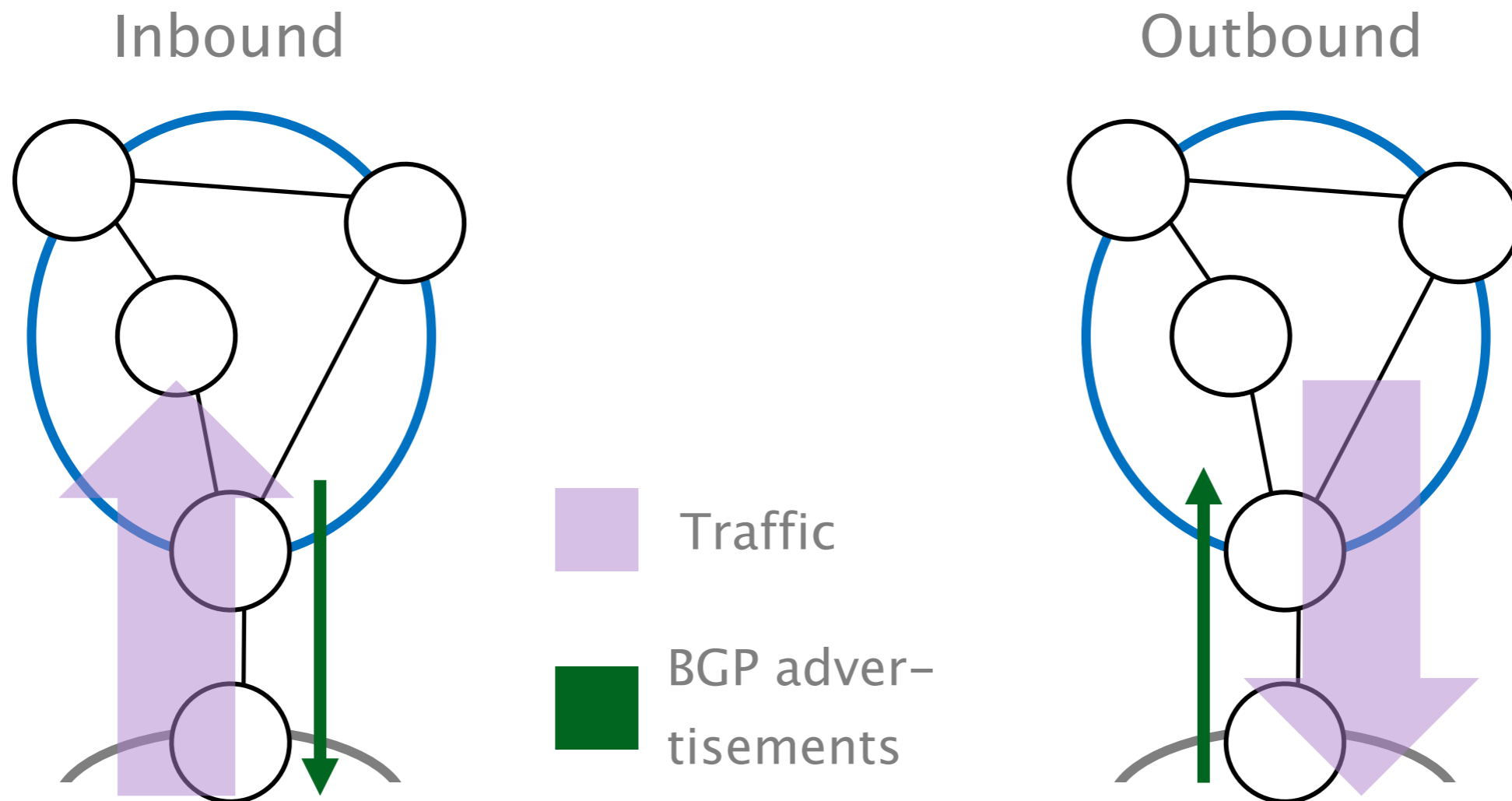


Influence inbound and outbound traffic



Route-maps can **only** influence the advertisements!

Influence inbound and outbound traffic



Route-maps can **only** influence the advertisements!

Full control only over **outbound** traffic!

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