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Computer Networks Research Group

netkit lab

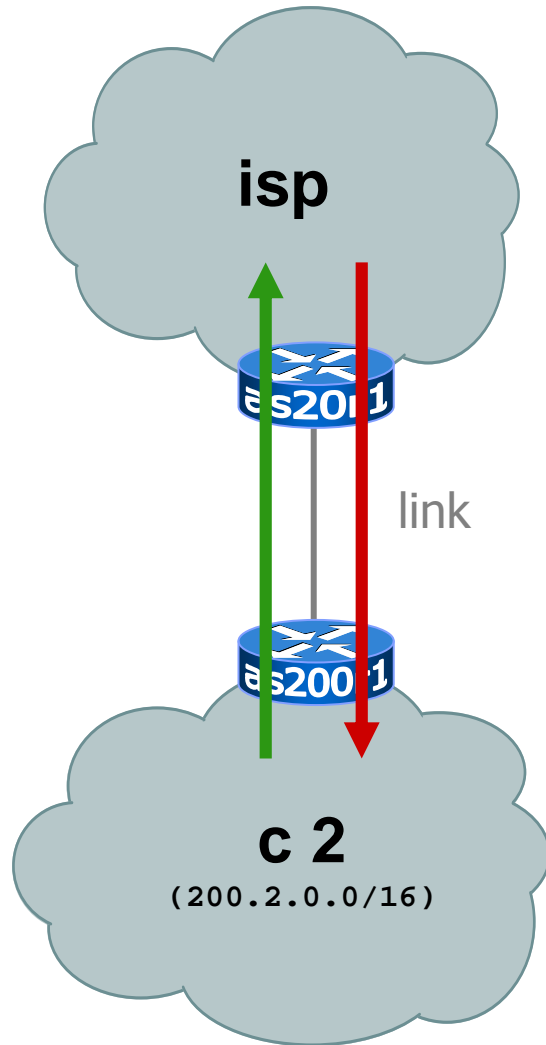
bgp: stub-as-static

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Description	configuration of a stub as with static routes

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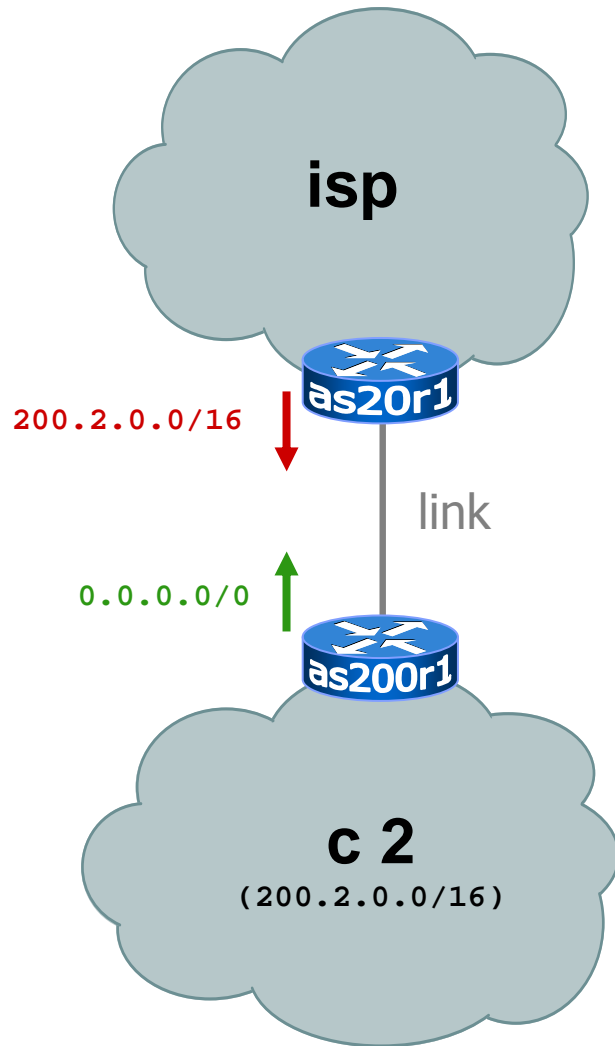
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stub network: are there options?



- outbound packets have to be sent through the link in order to reach the internet
- inbound packets have to be sent through the link in order to reach the new network

stub network with static routes



- a default static route is sufficient for the outbound packets to be sent to the internet through the link
- a static route is sufficient for inbound packets to be sent to the new network through the link
- no choices \Rightarrow no need for bgp

router as200r1 w/ static route



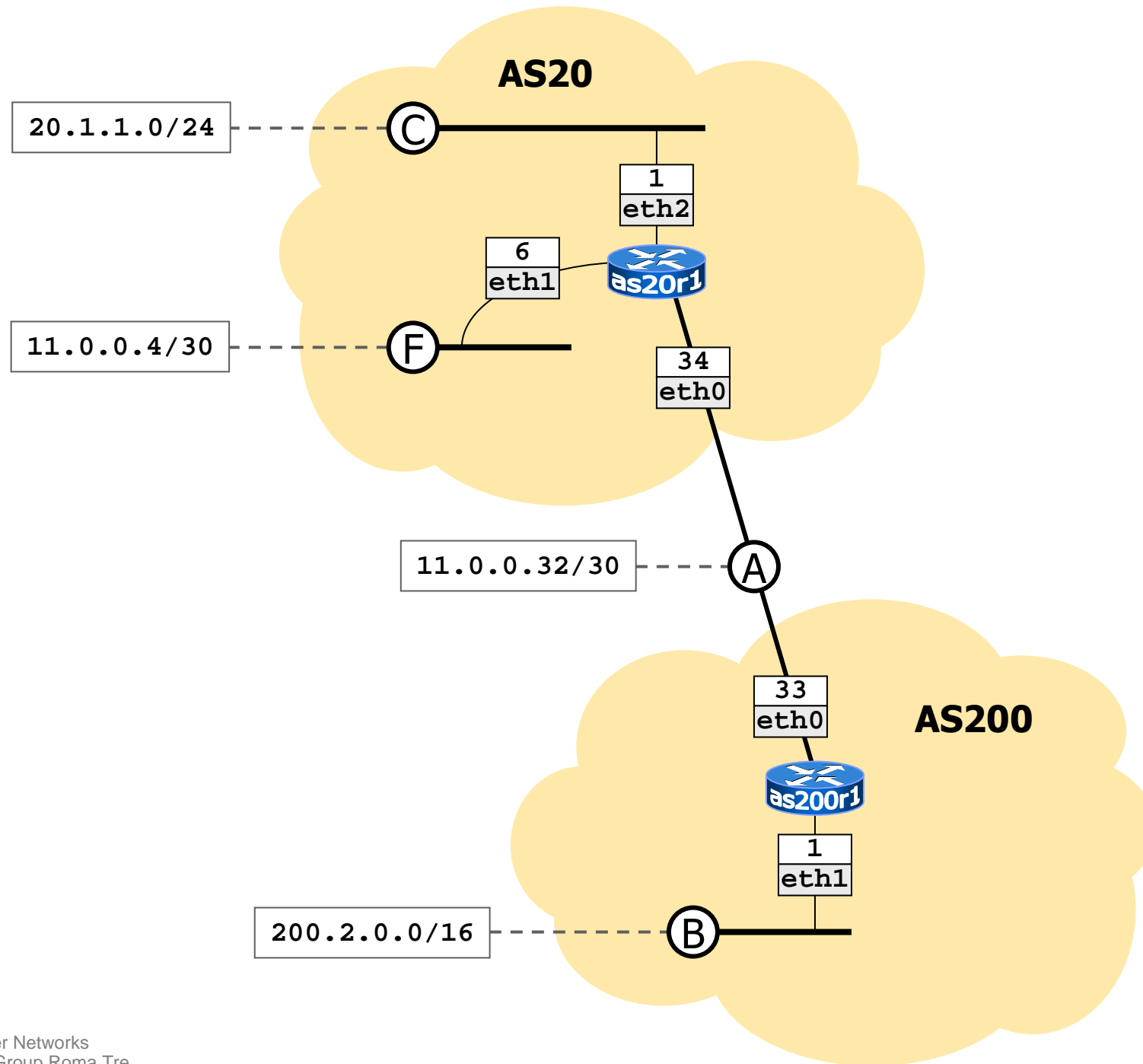
```
as200r1
```

```
as200r1:~# /sbin/ifconfig eth0 11.0.0.33 netmask 255.255.255.252 broadcast 11.0.0.35 up
as200r1:~# /sbin/ifconfig eth1 200.2.0.1 netmask 255.255.0.0 broadcast 200.2.255.255 up
as200r1:~# /sbin/route add default gw 11.0.0.34
as200r1:~# █
```

router as20r1 w/ static route



```
as20r1
as20r1:~# /sbin/ifconfig eth0 11.0.0.34 netmask 255.255.255.252 broadcast 11.0.0.35 up
as20r1:~# /sbin/ifconfig eth1 11.0.0.6 netmask 255.255.255.252 broadcast 11.0.0.7 up
as20r1:~# /sbin/ifconfig eth2 20.1.1.1 netmask 255.255.255.0 broadcast 20.1.1.255 up
as20r1:~# /sbin/route add -net 200.2.0.0 netmask 255.255.0.0 gw 11.0.0.33
as20r1:~# █
```



stub with static routes

- launch the script

```
host machine
user@localhost:~$ cd netkit-lab_bgp-stub-as-static
user@localhost:~/netkit-lab_bgp-stub-as-static$ ./start
```

- check the routing table of as20r1

```
as20r1
as20r1:~# route -n
Kernel IP routing table
Destination      Gateway          Genmask          Flags Metric Ref    Use Iface
11.0.0.32        0.0.0.0          255.255.255.252 U        0      0      0 eth0
11.0.0.4         0.0.0.0          255.255.255.252 U        0      0      0 eth1
20.1.1.0         0.0.0.0          255.255.255.0   U        0      0      0 eth2
200.2.0.0        11.0.0.33        255.255.0.0     UG       0      0      0 eth0
as20r1:~#
```

stub with static routes

- check the routing table of as200r1

as200r1

```
as200r1:~# route -n
Kernel IP routing table
Destination      Gateway          Genmask         Flags Metric Ref    Use Iface
11.0.0.32        0.0.0.0         255.255.255.252 U        0      0      0 eth0
200.2.0.0        0.0.0.0         255.255.0.0    U        0      0      0 eth1
0.0.0.0          11.0.0.34       0.0.0.0        UG       0      0      0 eth0
as200r1:~#
```

- try pinging 20.1.1.1
- terminate the lab

host machine

```
user@localhost:~/netkit-lab_bgp-stub-as-static$ !crash
```