



Università degli Studi Roma Tre
Dipartimento di Informatica e Automazione
Computer Networks Research Group

netkit-lab

bgp: small-internet

Version	2.0
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Description	emulation of a small internet

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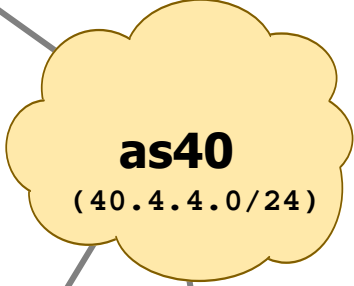
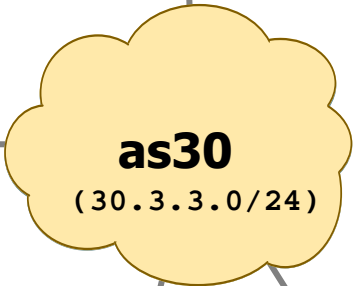
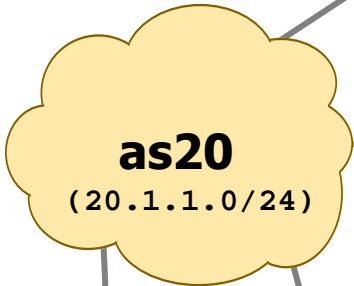
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providers

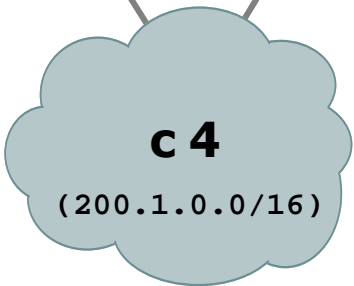
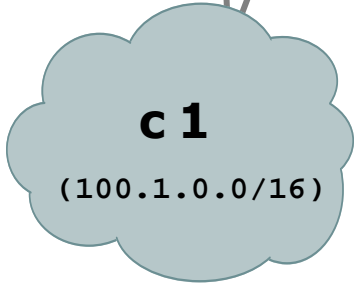
backbone



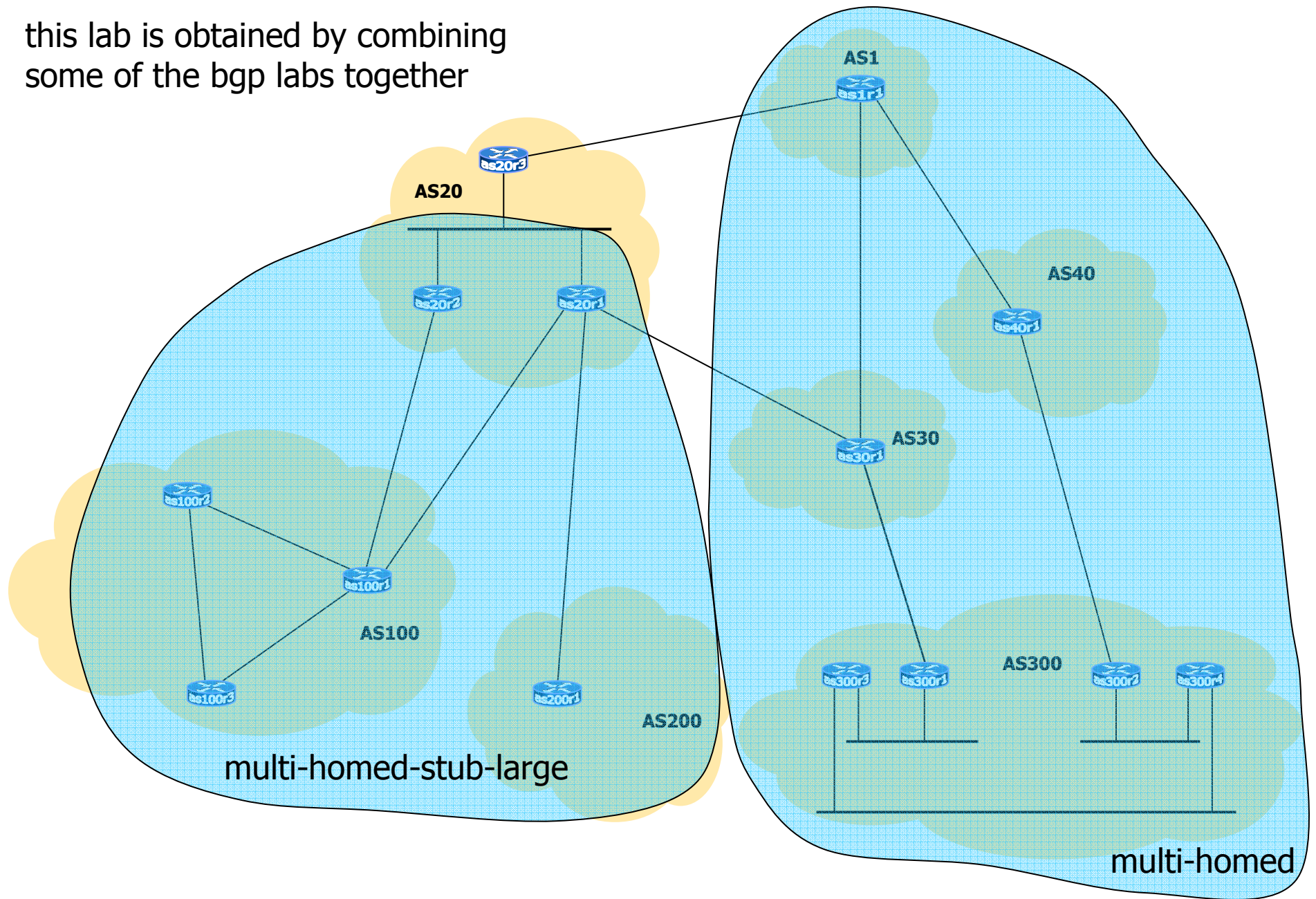
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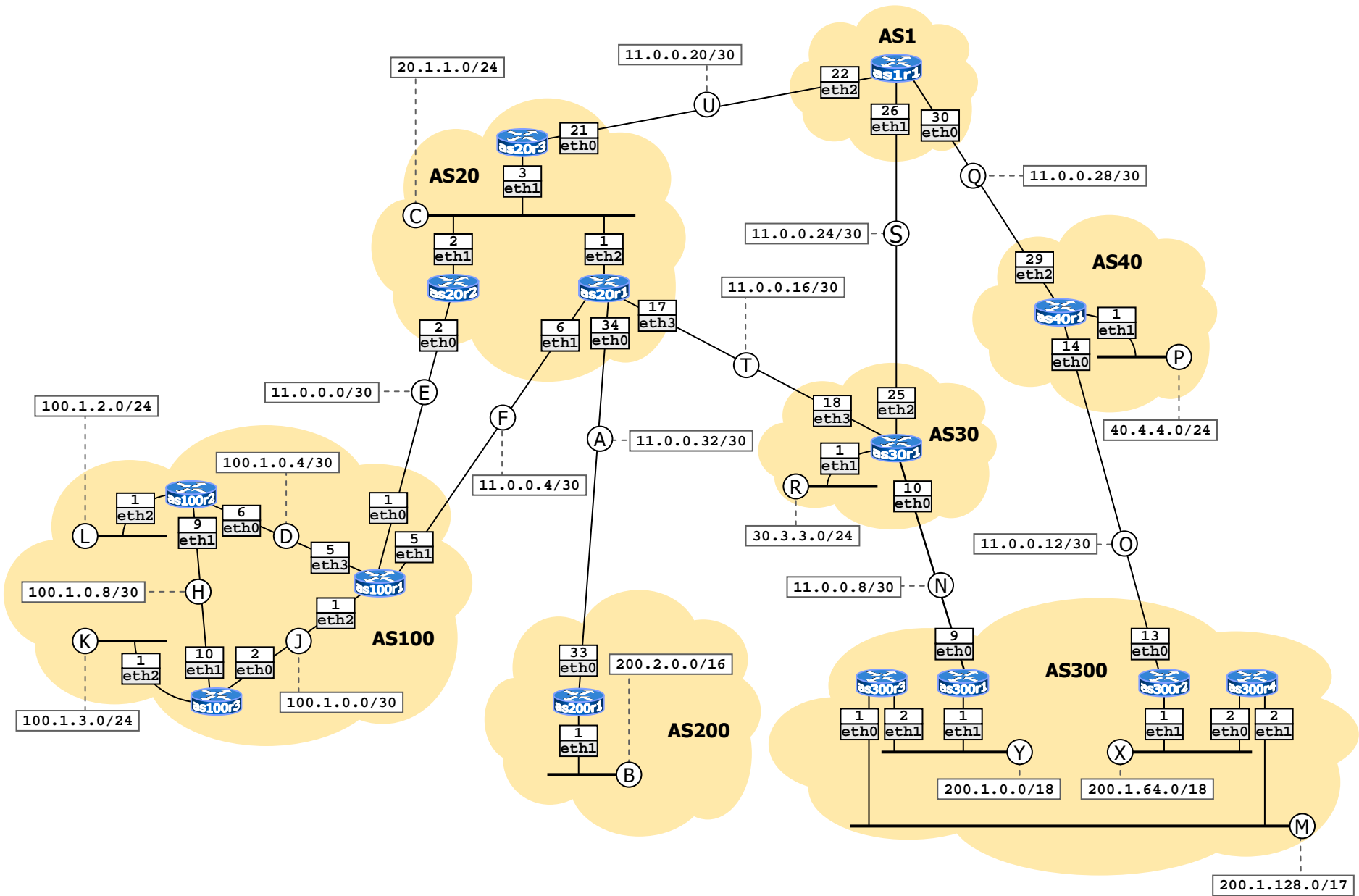


customer



this lab is obtained by combining some of the bgp labs together





router as20r1 configuration

zebra bgp configuration file

```
router bgp 20
network 20.1.1.0/24
network 11.0.0.4/30
network 11.0.0.16/30
network 11.0.0.32/30
!
neighbor 11.0.0.33 remote-as 200
neighbor 11.0.0.33 description Router as200r1
neighbor 11.0.0.33 default-originate
neighbor 11.0.0.33 prefix-list as200In in
neighbor 11.0.0.33 prefix-list defaultOut out
!
... next slide
```

router as20r1 configuration

zebra bgp configuration file

```
neighbor 11.0.0.5 remote-as 100
neighbor 11.0.0.5 description Router as100r1
neighbor 11.0.0.5 default-originate
neighbor 11.0.0.5 prefix-list as100In in
neighbor 11.0.0.5 prefix-list defaultOut out
!
neighbor 20.1.1.2 remote-as 20
neighbor 20.1.1.2 description Router as20r2 (iBGP)
!
neighbor 20.1.1.3 remote-as 20
neighbor 20.1.1.3 description Router as20r3 (iBGP)
... next slide
```

router as20r1 configuration

zebra bgp configuration file

```
neighbor 11.0.0.18 remote-as 30
neighbor 11.0.0.18 description Router as30r1 (eBGP)
neighbor 11.0.0.18 default-originate route-map dontUseMe
neighbor 11.0.0.18 route-map dontUseMe out
neighbor 11.0.0.18 prefix-list defaultOut out
!
ip prefix-list as200In permit 200.2.0.0/16
ip prefix-list as100In permit 100.1.0.0/16
ip prefix-list defaultOut permit 0.0.0.0/0
!
route-map dontUseMe permit 10
set as-path prepend 20 20 20
```

policy tools

- local preference
 - tunes outbound traffic flows
- metric (med)
 - tunes inbound traffic flows (local scope)
- as-path prepending
 - tunes inbound traffic flows (Internet scope)