



Università degli Studi Roma Tre
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netkit lab

bgp: announcement

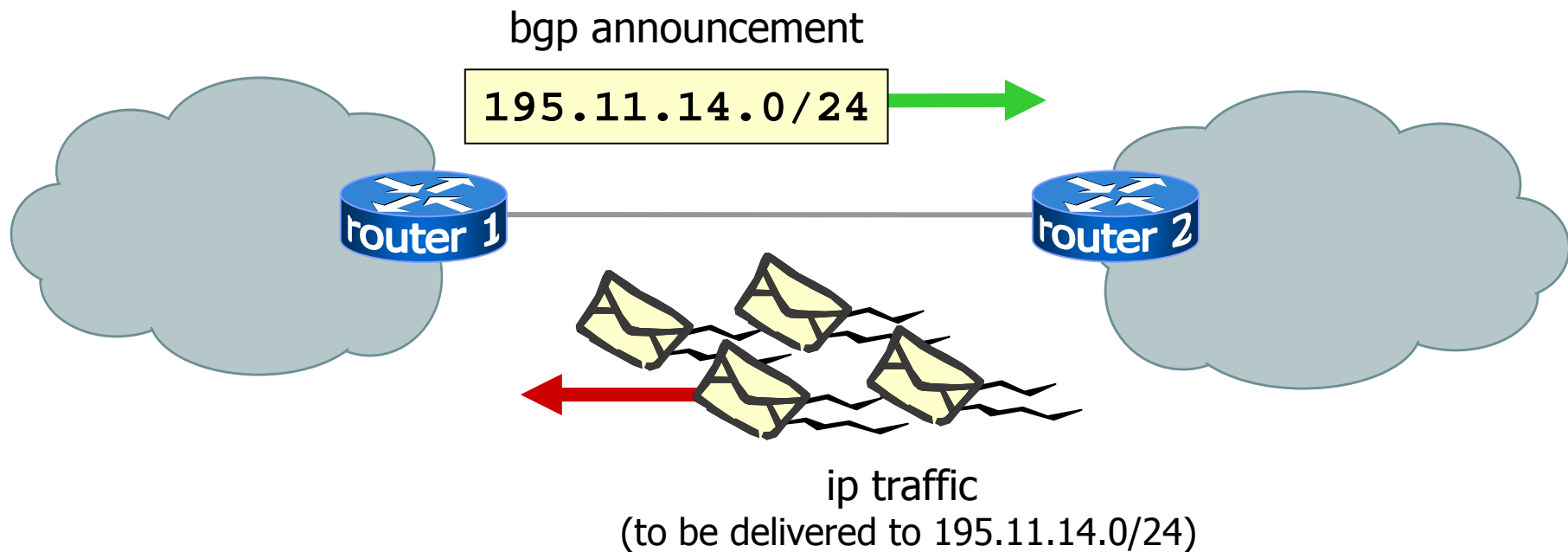
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Web	http://www.netkit.org/
Description	a simple bgp announcement

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announcements and traffic flows

- bgp allows a router to offer connectivity to another router
- “offering connectivity” means “promising the delivery to a specific destination”



announcement commands

cisco command syntax

```
network <network-ip> mask <network-mask>
```

zebra command syntax

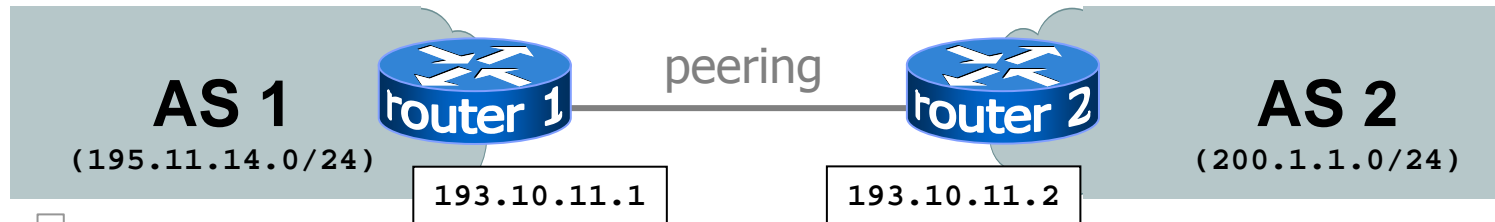
```
network <network-ip/network-mask>
```

- this command flags a network as local to the as
- without further specifications the network will be announced to all peers
- notice that the network
 - may not be local
 - is not even required to exist(!)

announcement commands

- observe that the `network` command
 - *does not* inject any route in the kernel forwarding table
 - checks whether the network address matches the netmask; if it does not, the command is automatically replaced in the router configuration; for example:
 - `network 193.100.0.0/8`
is replaced by
`network 193.0.0.0/8`
 - `network 1.2.3.4/0`
is replaced by
`network 0.0.0.0/0`

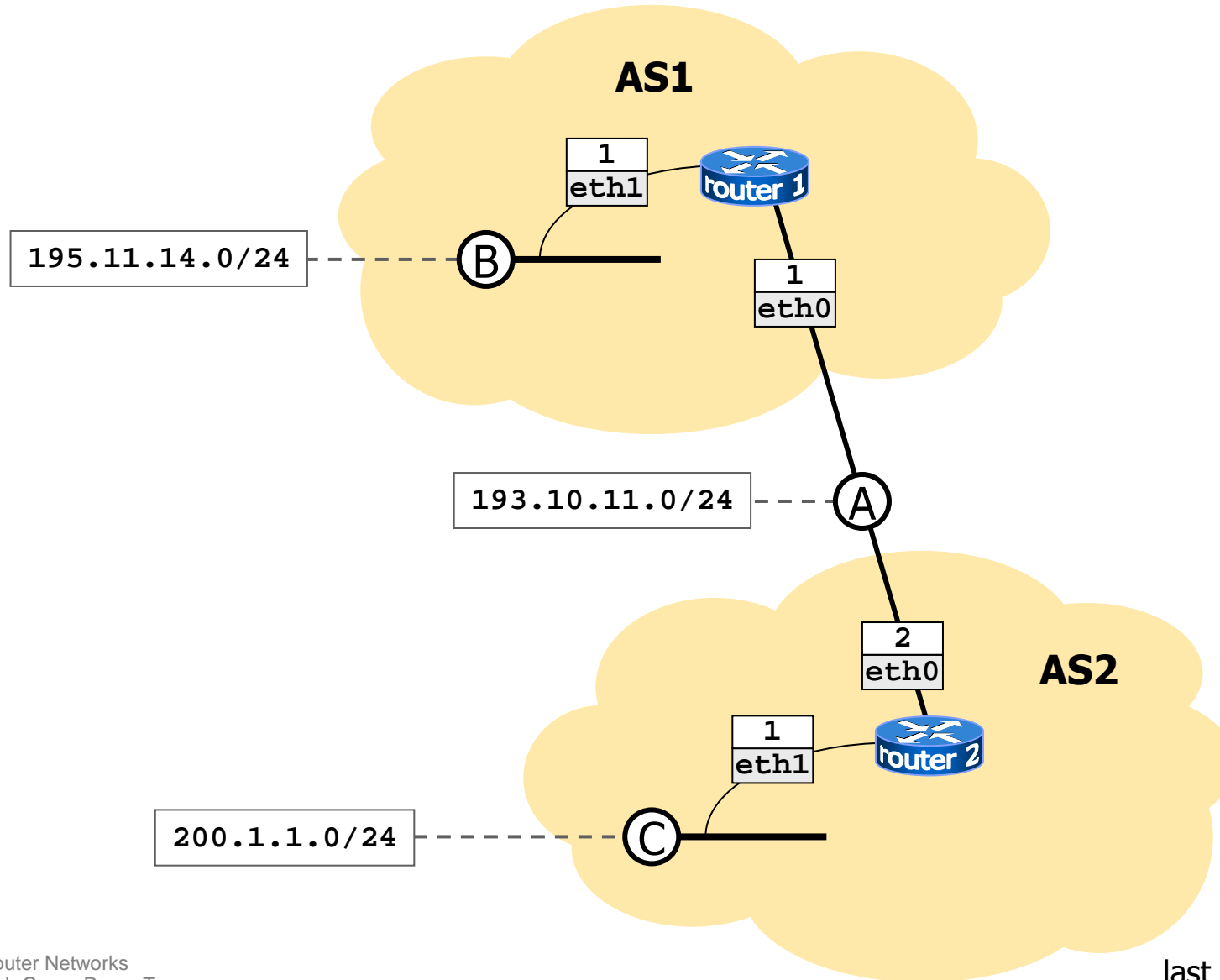
announcement example



```
! router 1 configuration file
router bgp 1
network 195.11.14.0/24
neighbor 193.10.11.2 remote-as 2
```

```
! router 2 configuration file
router bgp 2
network 200.1.1.0/24
neighbor 193.10.11.1 remote-as 1
```

peering configuration



announcement example

■ start the lab

▼ host machine

```
user@localhost:~$ cd netkit-lab_bgp-announcement
user@localhost:~/netkit-lab_bgp-announcement$ ./start
```

■ check the zebra routing table

▼ router2

```
router2:~# telnet localhost zebra
.....
User Access Verification

Password: zebra
Router> show ip route
Codes: K - kernel route, C - connected, S - static, R - RIP, O - OSPF,
       B - BGP, > - selected route, * - FIB route

C>* 127.0.0.0/8 is directly connected, lo
C>* 193.10.11.0/24 is directly connected, eth0
B>* 195.11.14.0/24 [20/0] via 193.10.11.1, eth0, 00:04:46
C>* 200.1.1.0/24 is directly connected, eth1
Router>
```

announcement example

- check the bgpd log file

```
router2
router2:~# less /var/log/zebra/bgpd.log
2007/05/22 12:36:57 BGP: 193.10.11.1 [FSM] Receive_KEEPALIVE_message
(Established->Established)
2007/05/22 12:36:58 BGP: 193.10.11.1 [FSM] Timer (routeadv timer expire)
2007/05/22 12:36:58 BGP: 193.10.11.1 send UPDATE 200.1.1.0/24
2007/05/22 12:36:58 BGP: 193.10.11.1 rcvd UPDATE w/ attr: nexthop
193.10.11.1, origin i, path 1
2007/05/22 12:36:58 BGP: 193.10.11.1 rcvd 195.11.14.0/24
2007/05/22 12:36:58 BGP: 193.10.11.1 [FSM] Receive_UPDATE_message
(Established->Established)
2007/05/22 12:37:28 BGP: 193.10.11.1 [FSM] Timer (routeadv timer expire)
2007/05/22 12:37:50 BGP: Performing BGP general scanning
2007/05/22 12:37:57 BGP: 193.10.11.1 [FSM] Timer (keepalive timer expire)
2007/05/22 12:37:57 BGP: 193.10.11.1 [FSM] KeepAlive_timer_expired
(Established->Established)
2007/05/22 12:37:57 BGP: 193.10.11.1 sending KEEPALIVE
/var/log/zebra/bgpd.log
```

announcement example

- check the bgpd log file

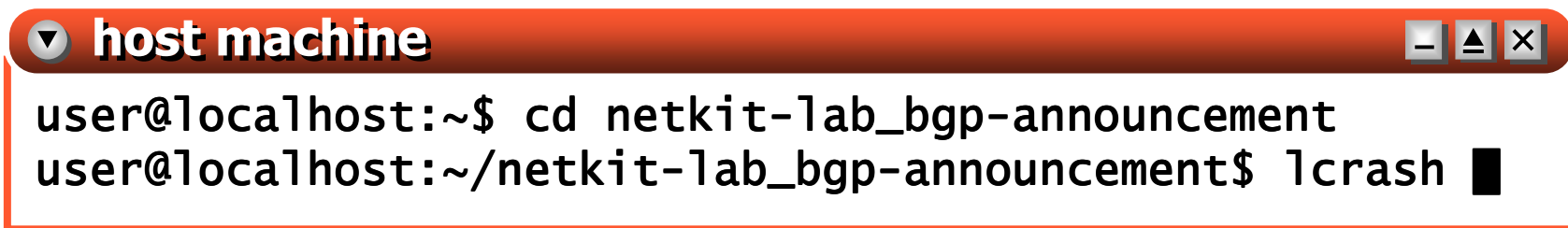
```
router2
router2:~# less /var/log/zebra/bgpd.log
2007/05/22 12:36:57 BGP: 193.10.11.1 [FSM] Receive_KEEPA_LIVE_message
(Established->Established)
2007/05/22 12:36:58 BGP: 193.10.11.1 [FSM] Timer (routeadv timer expire)
2007/05/22 12:36:58 BGP: 193.10.11.1 send UPDATE 200.1.1.0/24
2007/05/22 12:36:58 BGP: 193.10.11.1 rcvd UPDATE w/ attr: nexthop
193.10.11.1
2007/05/22 12:36:58 BGP: 193.10.11.1 rcvd 195.11.14.0/24
2007/05/22 12:36:58 BGP: 193.10.11.1 [FSM] Receive_UPDATE_message
(Established->Established)
2007/05/22 12:36:58 BGP: 193.10.11.1 [FSM] Timer (routeadv timer expire)
2007/05/22 12:37:50 BGP: Performing BGP general scanning
2007/05/22 12:37:57 BGP: 193.10.11.1 [FSM] Timer (keepalive timer expire)
2007/05/22 12:37:57 BGP: 193.10.11.1 [FSM] KeepAlive_timer_expired
(Established->Established)
2007/05/22 12:37:57 BGP: 193.10.11.1 sending KEEPA_LIVE
/var/log/zebra/bgpd.log
```

sent
announcement

received
announcement

announcement example

- check the bgpd cli (command line interface)
 - type "telnet localhost bgpd"
 - insert the password "zebra"
 - type "show ip bgp neighbors"
 - type "show ip bgp 200.1.1.0"
- ping "200.1.1.0"
- terminate the lab



```
▼ host machine [ - ▲ × ]
user@localhost:~$ cd netkit-lab_bgp-announcement
user@localhost:~/netkit-lab_bgp-announcement$ lcrash █
```