kathara lab

bgp: simple-peering

Version	1.0
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Description	setting up a bgp peering between two autonomous systems; kathara version of a netkit lab

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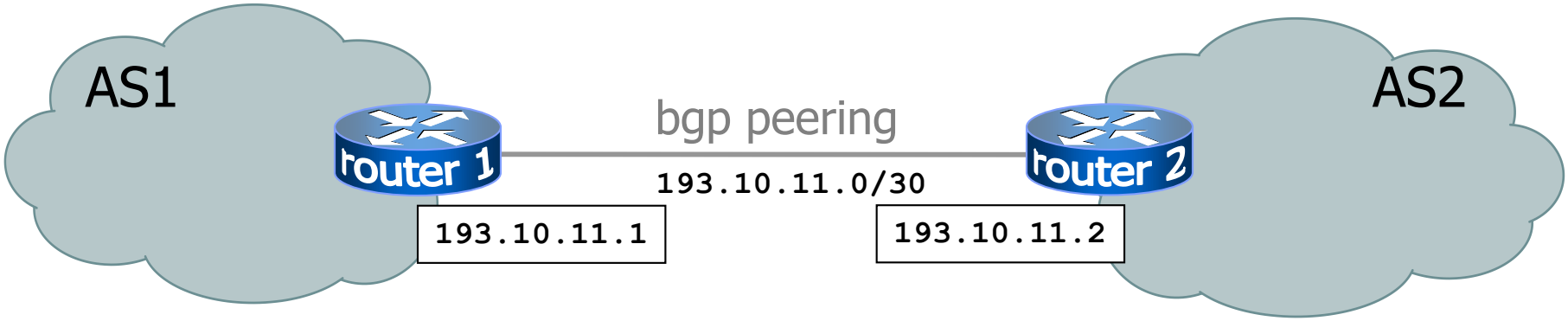
a bgp peering between two ases

- bgp allows routers to exchange information only if a peering session is up
- a bgp peering is the tcp connection over which routing information will be exchanged



peering configuration commands

command syntax

```
! <a-comment-on-a-single-line>
```

command syntax

```
router bgp <my-as-number>
```

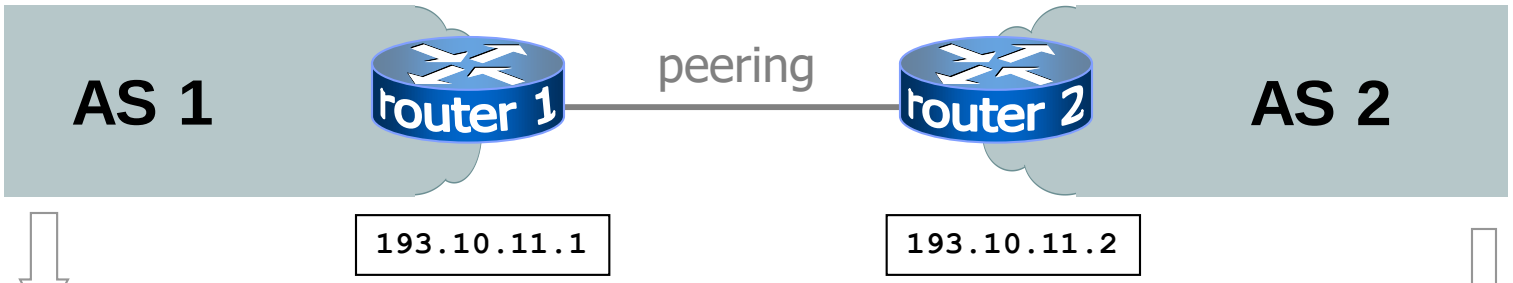
command syntax

```
neighbor <neighbor-ip> remote-as <neighbor-as-num>
```

command syntax

```
neighbor <neighbor-ip> description <text>
```

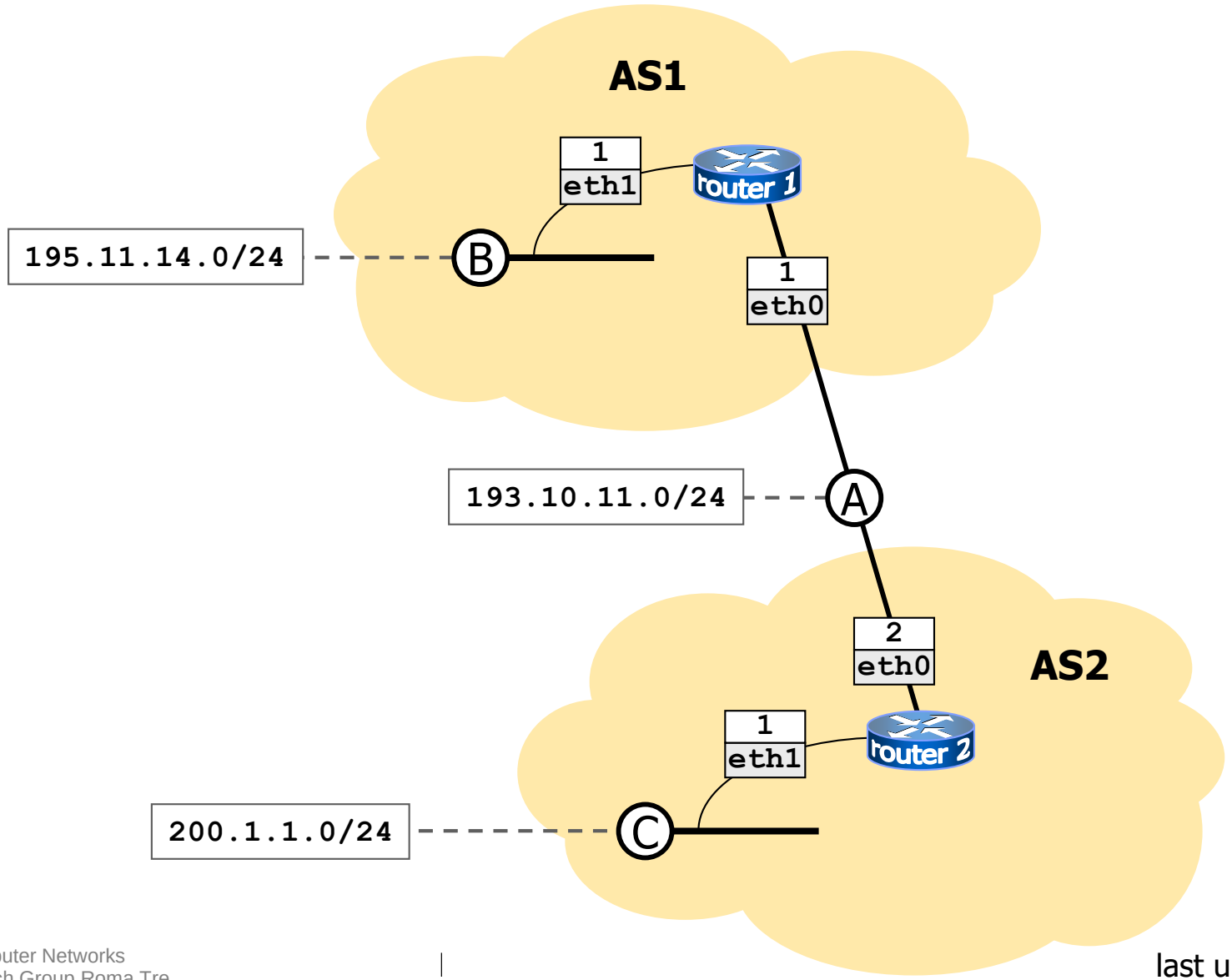
peering configuration example




```
! router 1 configuration file
router bgp 1
neighbor 193.10.11.2 remote-as 2
neighbor 193.10.11.2 description Router 2
```

```
! router 2 configuration file
router bgp 2
neighbor 193.10.11.1 remote-as 1
neighbor 193.10.11.1 description Router 1
```

a simple peering



a simple peering

- launch the script

host machine

```
user@localhost:~$ cd kathara-lab_bgp-simple-peering
user@localhost:~/kathara-lab_bgp-simple-peering$ lstart
```

- check the bgpd configuration file

router1

```
router1:~# less /etc/zebra/bgpd.conf
!
hostname bgpd
password zebra
enable password zebra
!
router bgp 1
/etc/zebra/bgpd.conf
```

a simple peering

- check the routing tables

router1

```
router1:~# route
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
193.10.11.0     *               255.255.255.0   U     0      0        0 eth0
195.11.14.0     *               255.255.255.0   U     0      0        0 eth1
router1:~#
```

  - as no routing protocol (not even bgp!) is propagating routing information, only local routes are known

a simple peering

- check the log file of the bgp daemon

router1

```
router1:~# less /var/log/zebra/bgpd.log
2007/05/22 11:01:06 BGP: BGPd 0.94 starting: vty@2605, bgp@179
2007/05/22 11:01:14 BGP: 193.10.11.2 [FSM] Timer (start timer expire).
2007/05/22 11:01:14 BGP: 193.10.11.2 [FSM] BGP_Start (Idle->Connect)
2007/05/22 11:01:14 BGP: 193.10.11.2 went from Idle to Connect
2007/05/22 11:01:14 BGP: 193.10.11.2 [Event] Connect start to 193.10.11.2 fd 9
2007/05/22 11:01:14 BGP: 193.10.11.2 [FSM] Non blocking connect waiting result
2007/05/22 11:01:17 BGP: 193.10.11.2 [Event] Connect failed (Operation now in
progress)
2007/05/22 11:01:17 BGP: 193.10.11.2 [FSM] TCP_connection_open_failed
(Connect->Active)
2007/05/22 11:01:17 BGP: 193.10.11.2 went from Connect to Active
2007/05/22 11:01:31 BGP: [Event] BGP connection from host 193.10.11.2
2007/05/22 11:01:31 BGP: [Event] Make dummy peer structure until read Open
packet
/var/log/zebra/bgpd.log
```

a simple peering

- check the command line interface of bgpd

router1

```
router1:~# telnet localhost bgpd
Trying 127.0.0.1...
Connected to router1.
Escape character is '^]'.

Hello, this is zebra (version 0.94).
Copyright 1996-2002 Kunihiro Ishiguro.


User Access Verification

Password: zebra
bgpd> show ip bgp summary
BGP router identifier 195.11.14.1, local AS number 1
0 BGP AS-PATH entries
0 BGP community entries

Neighbor        V    AS MsgRcvd MsgSent   TblVer  InQ OutQ Up/Down  State/PfxRcd
193.10.11.2     4     2      53      55        0    0    0 00:53:00        0

Total number of neighbors 1
bgpd>
```

a simple peering

- check the peering status

router1

```
bgpd> show ip bgp neighbors
BGP neighbor is 193.10.11.2, remote AS 2, local AS 1, external link
 Description: Router 2 of AS2
  BGP version 4, remote router ID 200.1.1.1
  BGP state = Established, up for 00:57:51
  Last read 00:00:49, hold time is 180, keepalive interval is 60 seconds
  Neighbor capabilities:
    Route refresh: advertised and received (old and new)
    Address family IPv4 Unicast: advertised and received
  Received 58 messages, 0 notifications, 0 in queue
  Sent 60 messages, 0 notifications, 0 in queue
  Route refresh request: received 0, sent 0
  Minimum time between advertisement runs is 30 seconds

 For address family: IPv4 Unicast
  Community attribute sent to this neighbor (both)
  0 accepted prefixes

  Connections established 1; dropped 0
Local host: 193.10.11.1, Local port: 179
Foreign host: 193.10.11.2, Foreign port: 3452
Nexthop: 193.10.11.1
Nexthop global: fe80::fcfd:c1ff:fe0a:b01
Nexthop local: ::
BGP connection: non shared network
Read thread: on  Write thread: off

bgpd>
```

a simple peering

- stop the lab

host machine

```
user@localhost:~$ cd kathara-lab_bgp-simple-peering
user@localhost:~/kathara-lab_bgp-simple-peering$ lcrash
```