Management and Operations of Networks, Services, and Systems

Routing

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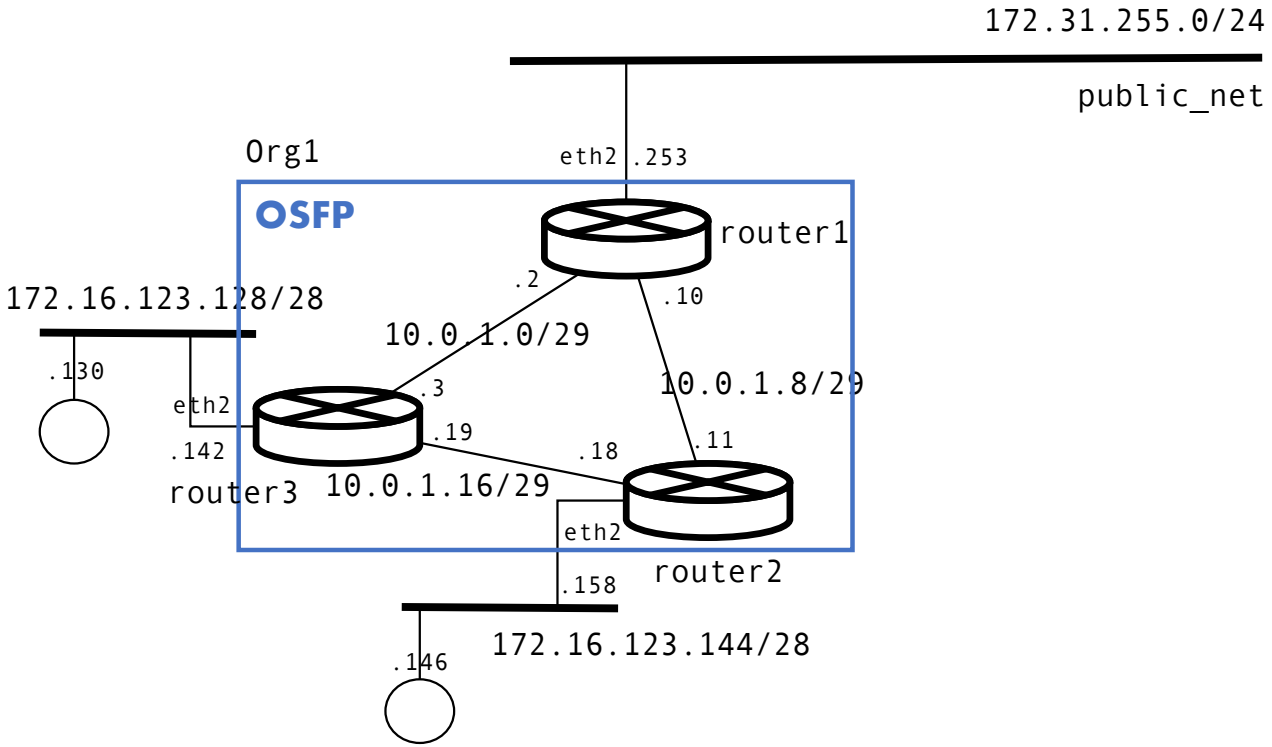
OSPF



Two public networks of the organization
172.16.123.128/28
172.16.123.144/28

External public network
172.31.255.0/24

Quagga on routers

Software for network device

CLI similar to CISCO

Zebra, OSPF, BGP, etc

$ telnet localhost 2601

$ telnet localhost 2604

Networks

Two public networks for org1

Three internal networks for routers

OSPF

Single area (area 0)

Only send LSAs on internal networks

Send default gateway

Test

Ping client on one network from a client on another networks

See ip routes on each router

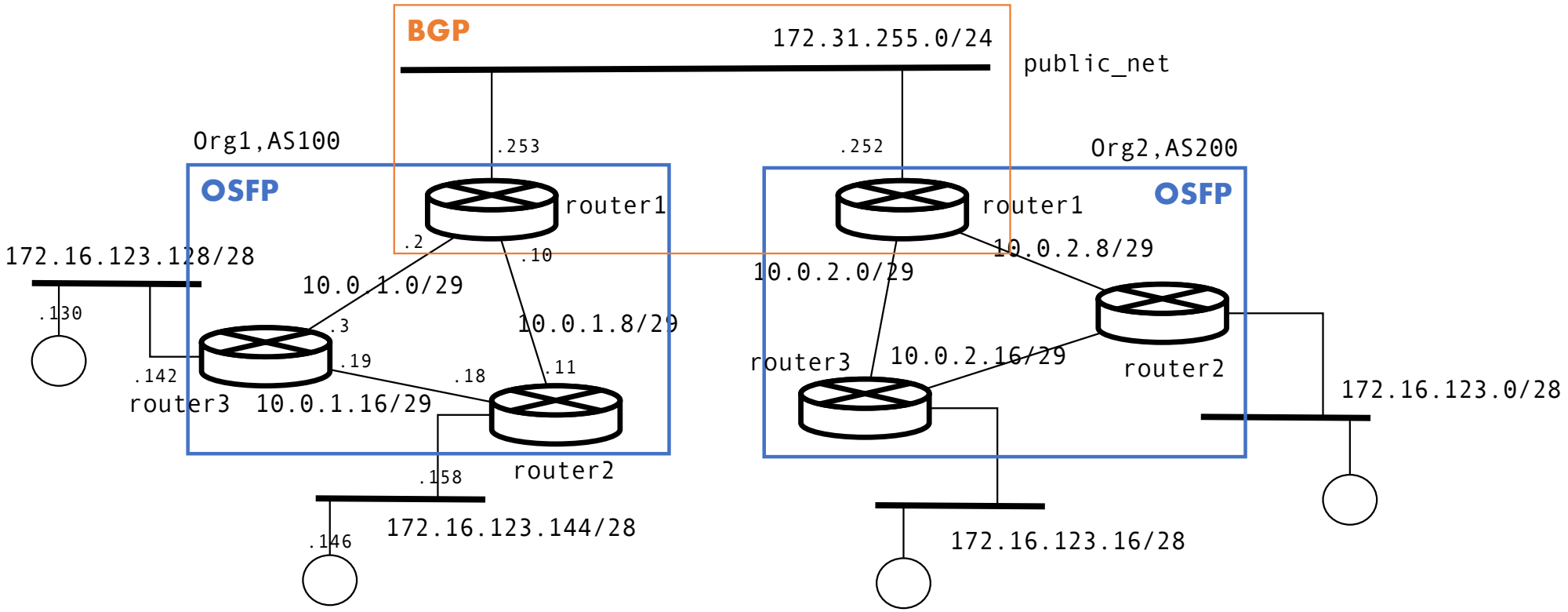
Verify designated routers (DR, BDR) on quagga CLI

Code

https://github.com/rmorla/gors/org1-ospf

Docker image with quagga

Two BGP peers (with OSPF)



Quagga on routers

$ telnet localhost 2605

Networks

One public network

Two public networks on each org

Three internal networks for routers on each org

Two autonomous systems

BGP

Set AS number

Distribute OSPF routes to BGP peers

Define neighbor AS routers

OSPF

Distribute BGP routes to OSPF routers inside the AS

Test

Ping client on one AS from a client on another AS

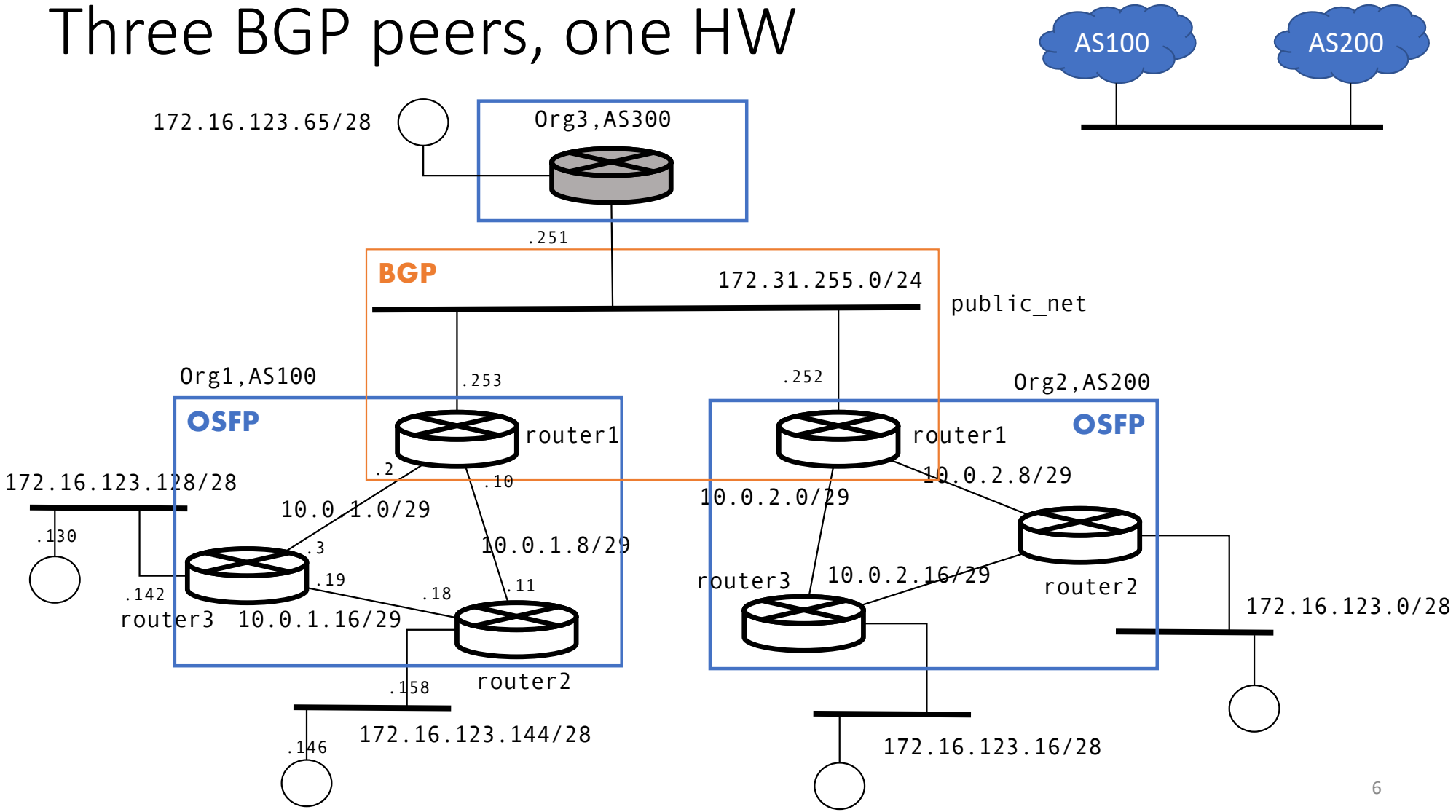
See ip routes on each router

Verify BGP peers on quagga CLI

Code

https://github.com/rmorla/gors/bgp-2peers

Three BGP peers, one HW



External network: public_net

Change public_net to macvlan type so that the router can access it.

Networks on the router

One public network to be announced by BGP.

One interface on public_net

BGP

Workout the BGP syntax for the router. Should be able to do the same as in Quagga.

Test

Should be able to ping any of the prefixes from any of the AS's.

Code

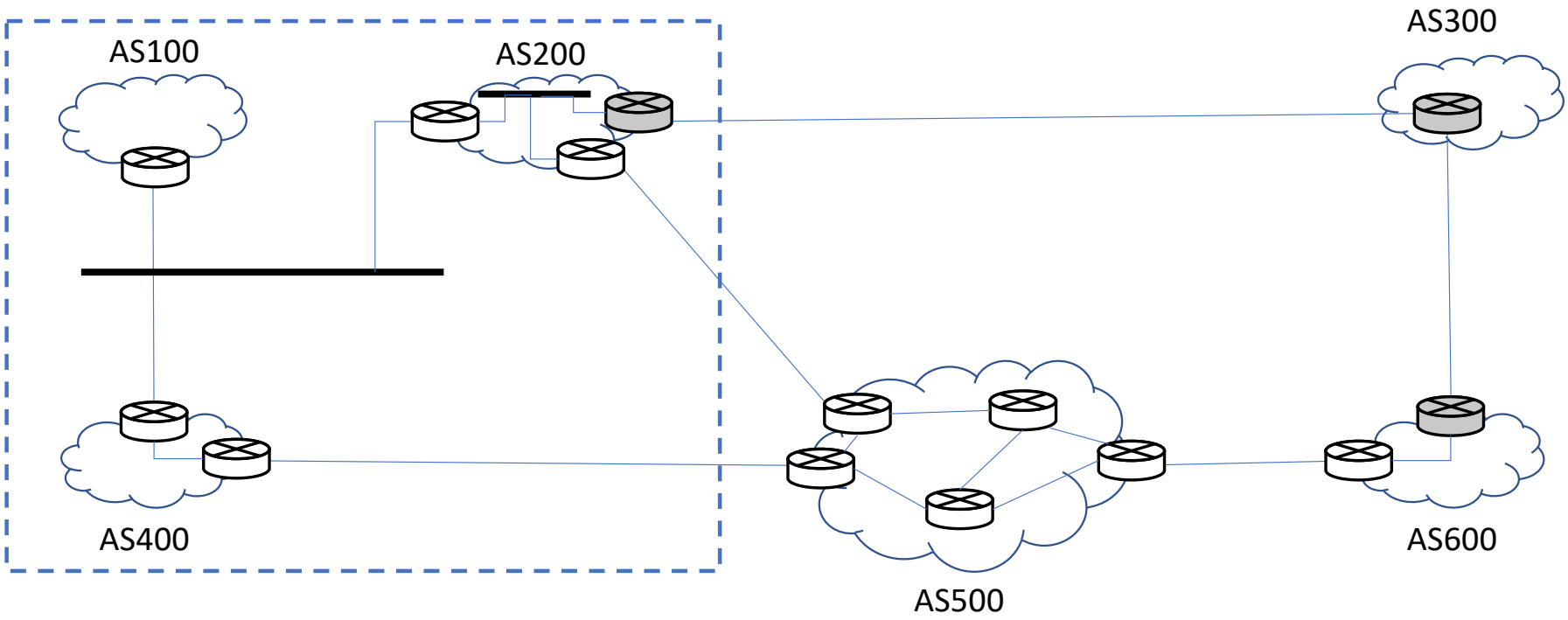
https://github.com/rmorla/gors/bgp-3peers-hw

Multiple BGP peers
With actual routers

Assign IP addresses

Public networks in each AS announced by BGP
Internal networks between routers of same AS
Interconnect networks between routers of different AS's

hardware software



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An organization's network

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