



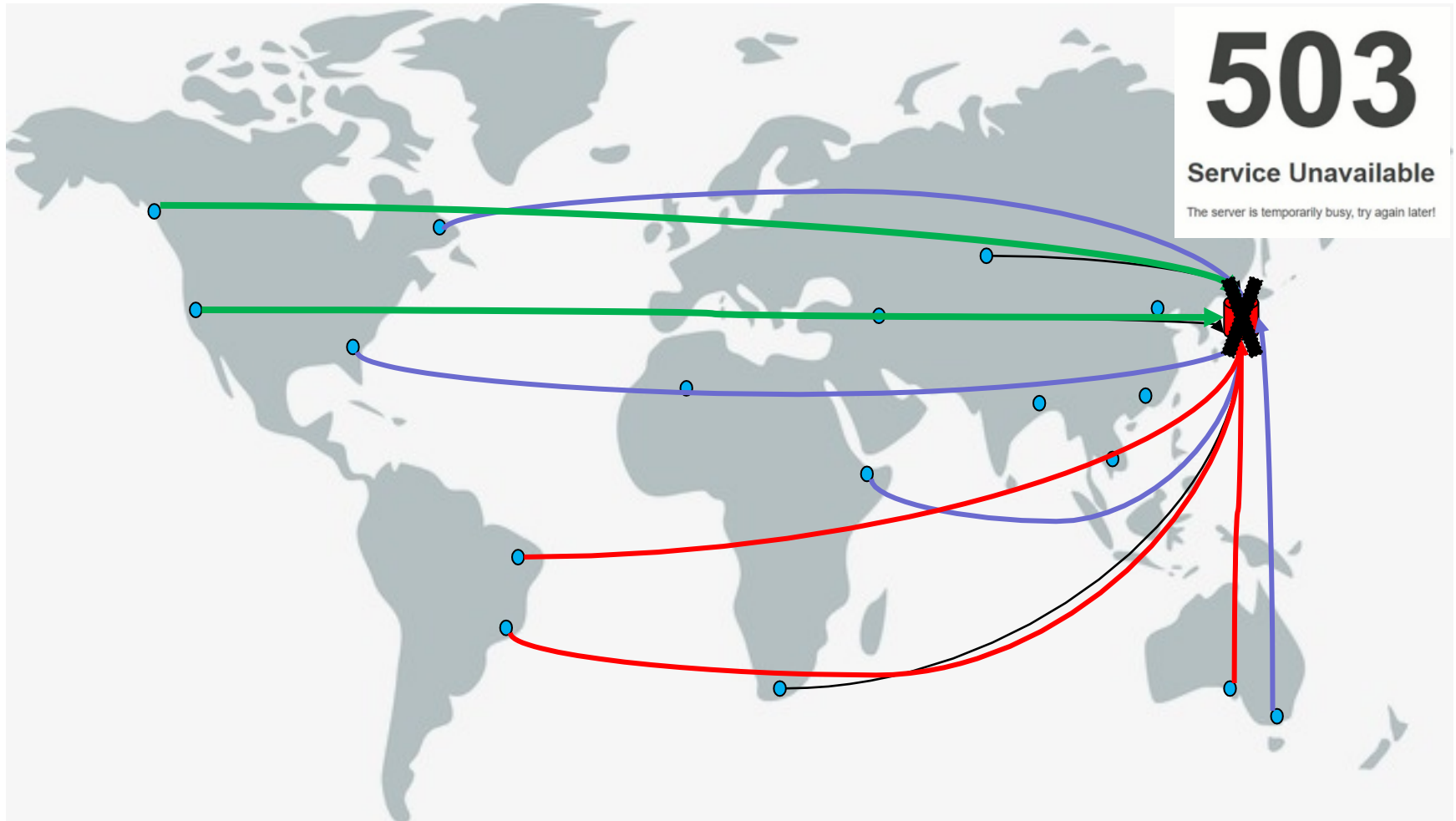
# Geo-Location aware DNS



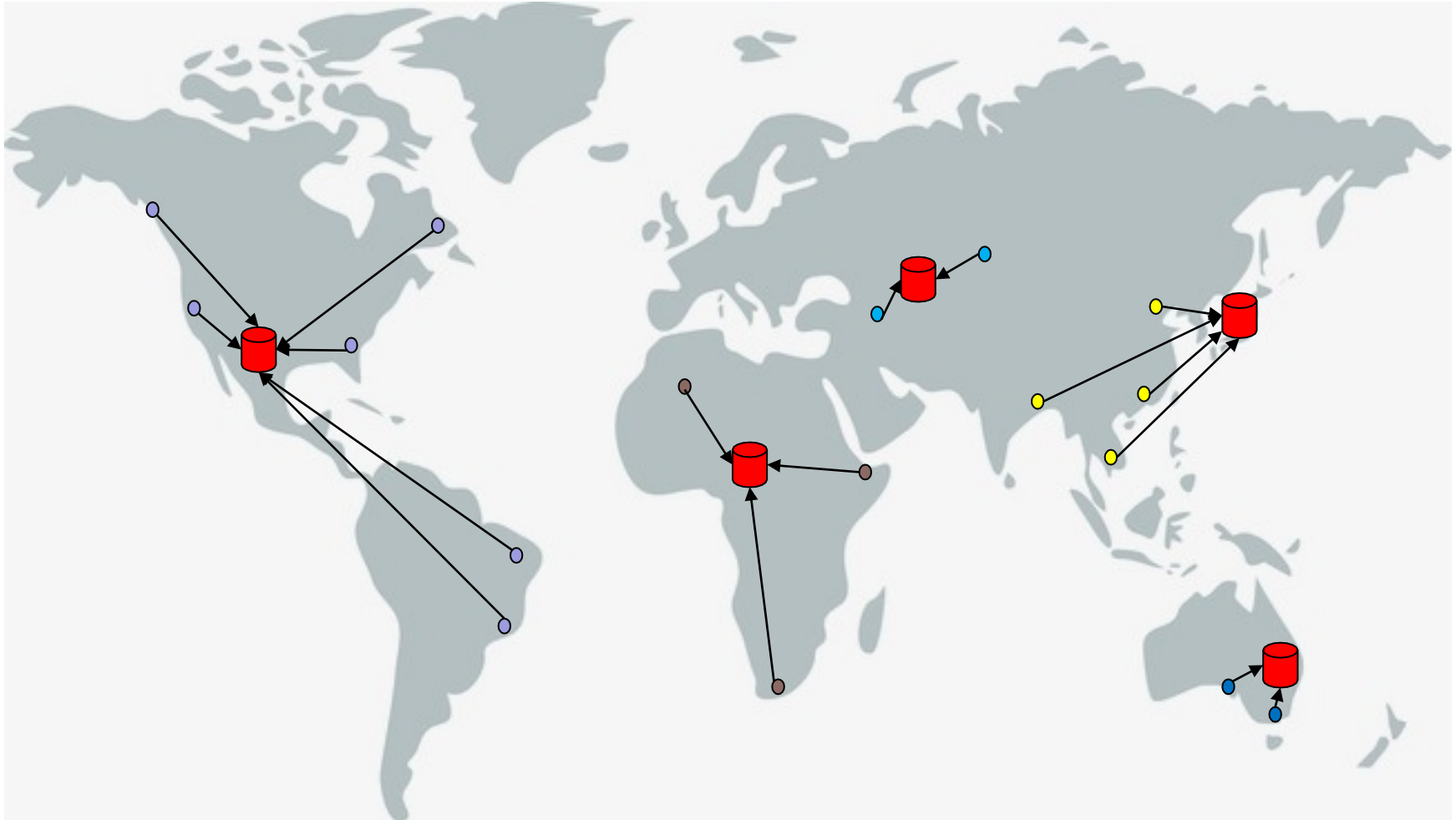
# Agenda

- What is the problem ? Solution ?
- How GSLB works ?
- Implementation ?
- Final Results ?

# What is the problem ?

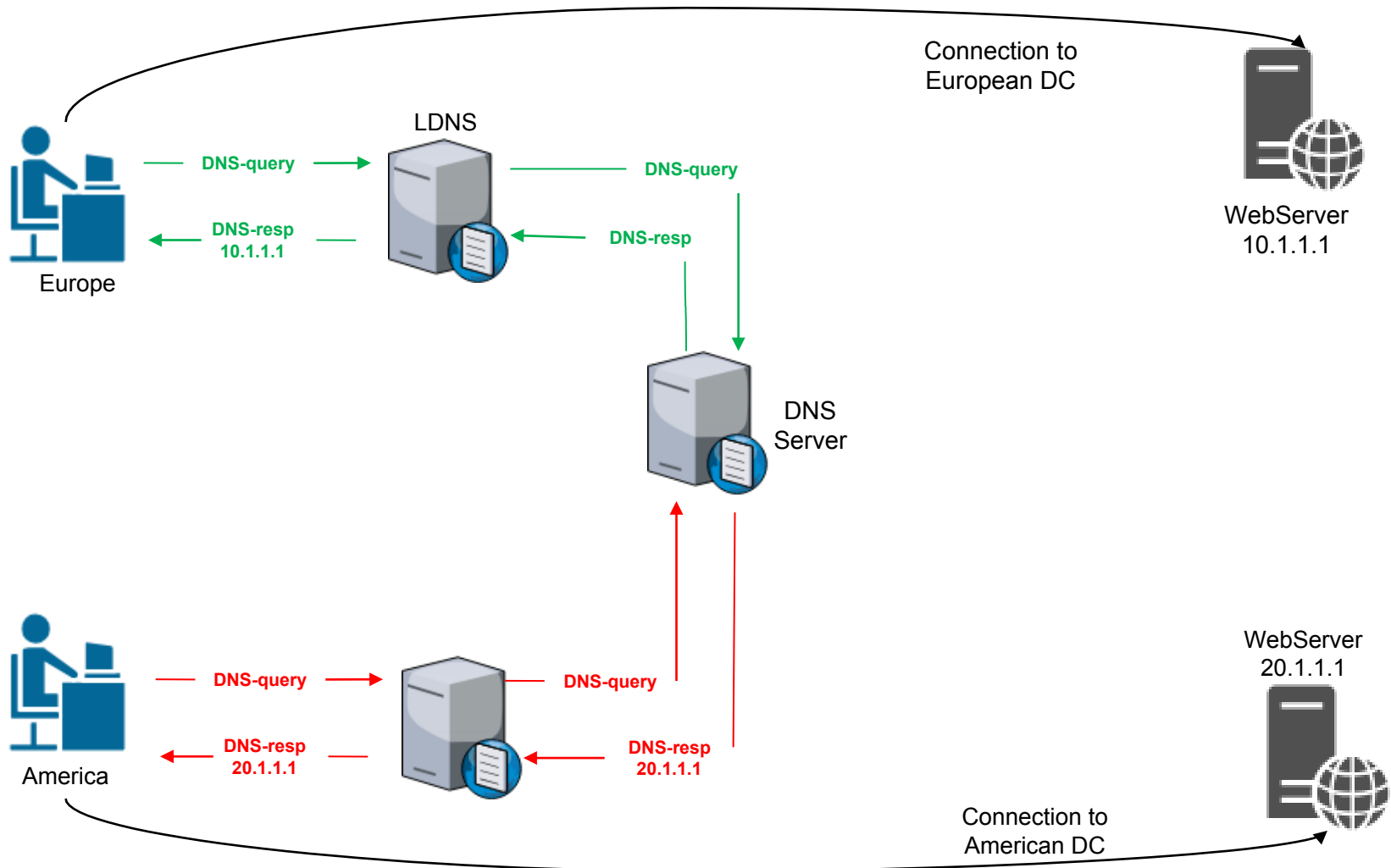


# What is the solution ?





# How GSLB works ?



# Implementation ?

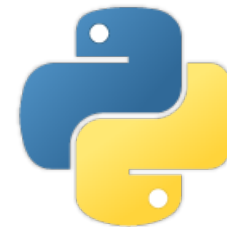
- BIND9
  - Berkeley Internet Name Domain
  - Open Source



- Linux Ubuntu 16.04

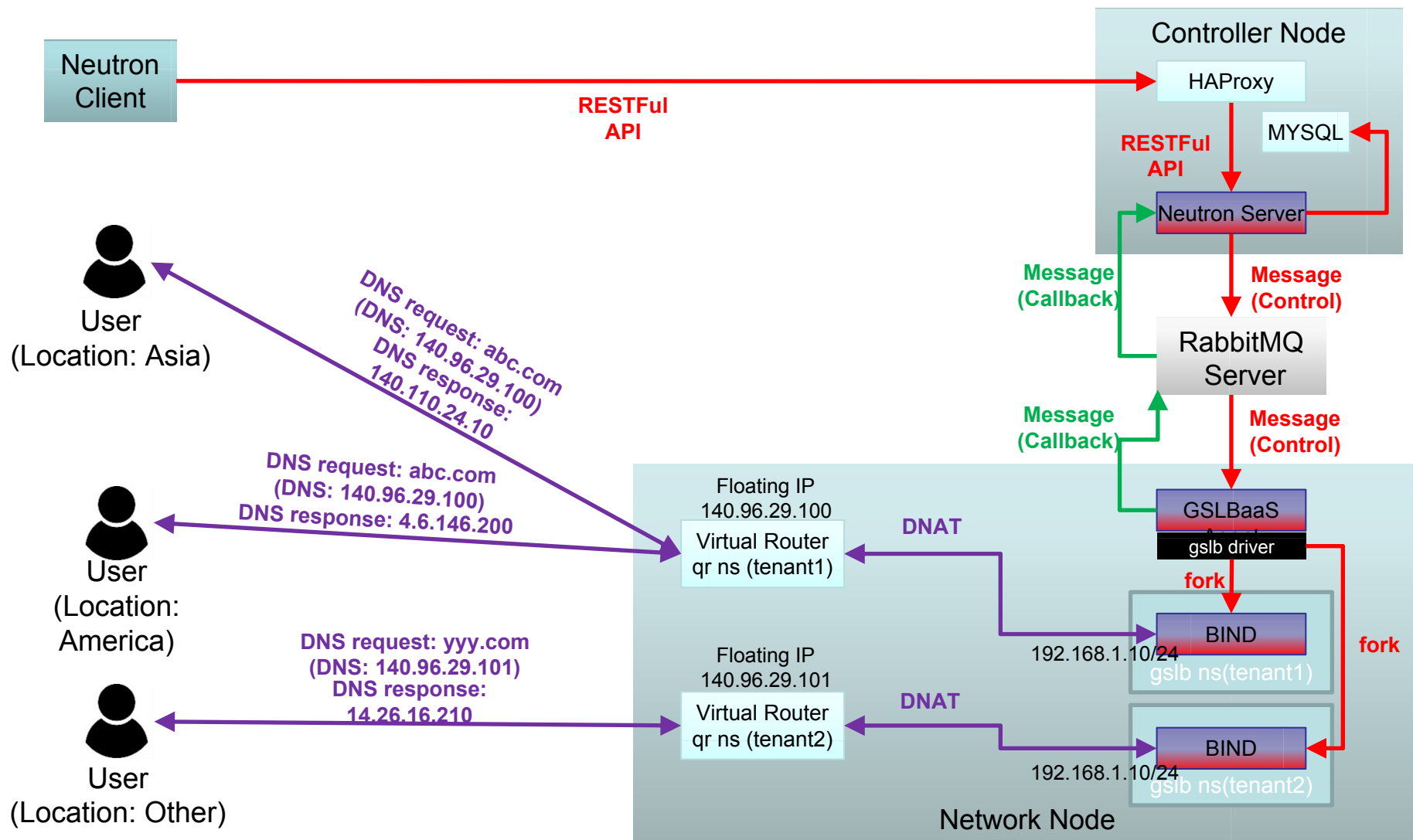


- Python 2.7
  - GSLB library
  - Integration with OpenStack



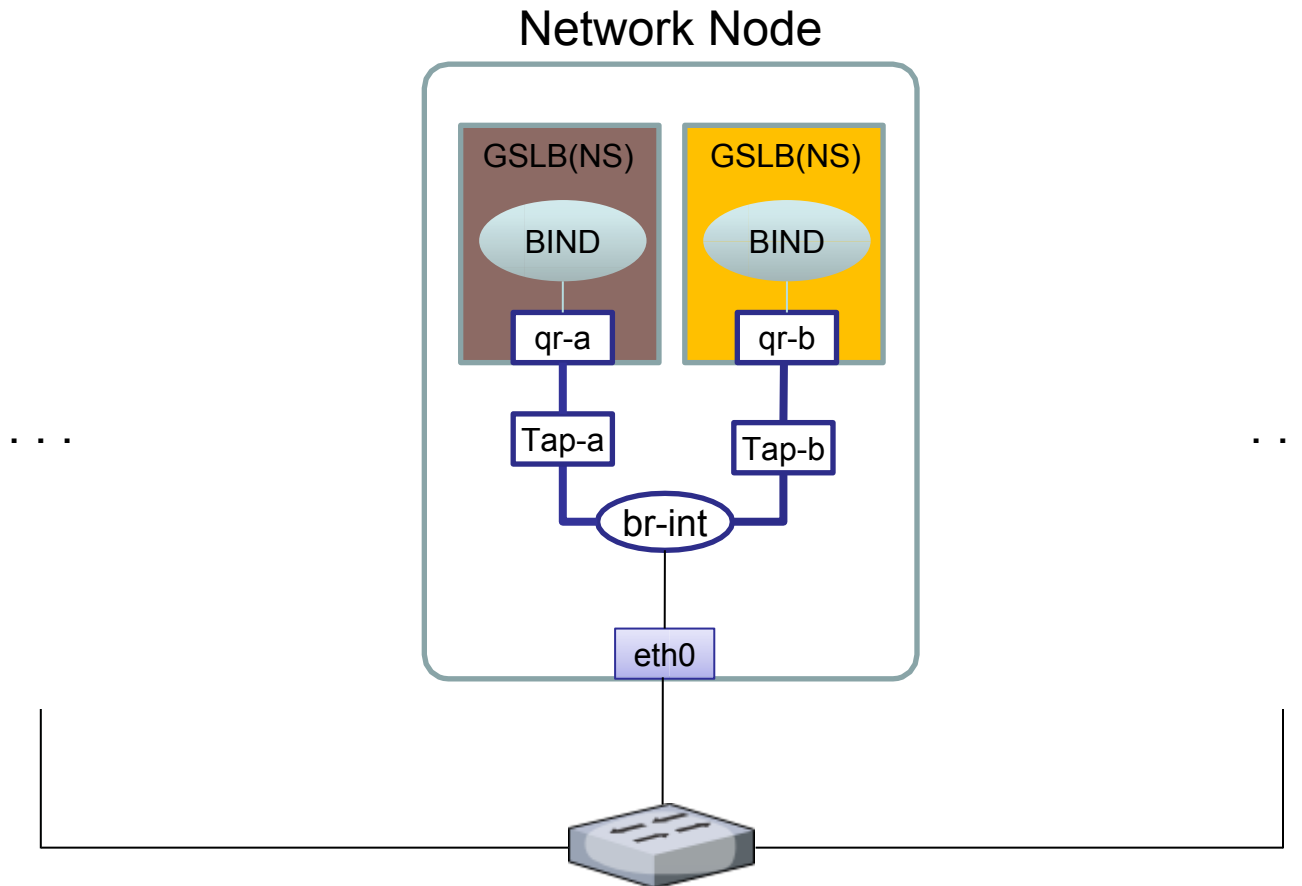


# Implementation ? (Cont.)





# Implementation ? (Cont.)







# Implementation ? (Cont.)

## geolP.acf

```
...  
acl "TW" {  
    140.110.24.0/24  
}  
acl "US" {  
    4.16.146.0/24  
}  
...
```

## named.conf

```
include "geolP.acf";  
view "asia" {  
    match-clients { TW, CN, ... };  
    zone "xxx.com"  
    type master;  
    file "/path/to/db-asia.example.com"  
}  
view "america" {  
    match-clients { US, ... };  
    zone "xxx.com"  
    type master;  
    file "/path/to/db-  
america.example.com"  
}  
view "default" {  
    match-clients { any; };  
    zone "xxx.com"  
    type master;  
    file "/path/to/db-  
america.example.com"  
}  
}
```

....

## db-asia.example.com

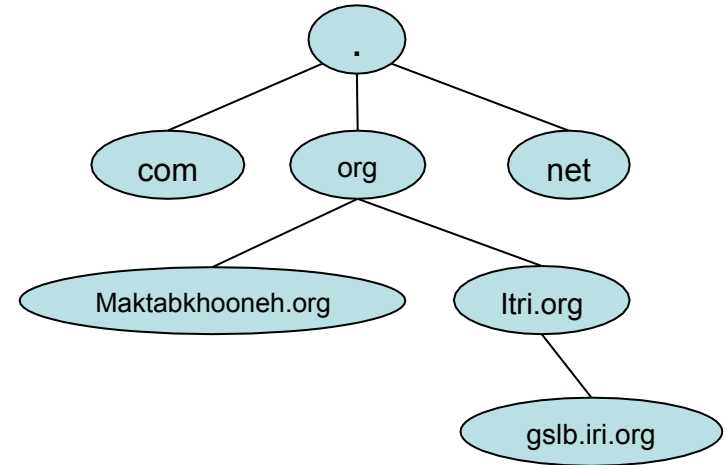
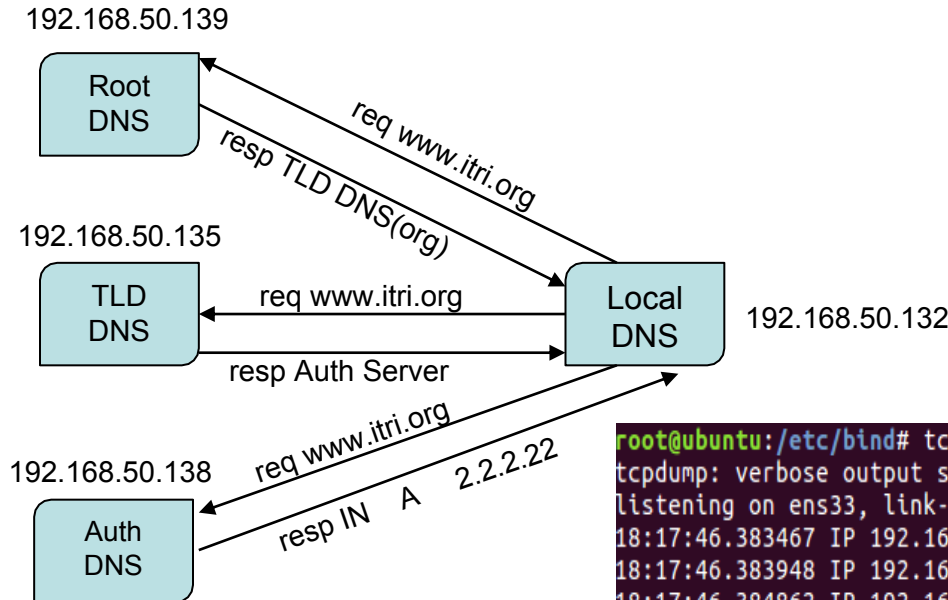
```
...  
mirror IN A 140.110.24.10  
...
```

## db-america.example.com

```
...  
mirror IN A 4.16.146.200  
...
```

# Final Result ?

- Testing Environment



```
root@ubuntu:/etc/bind# tcpdump -n udp port 53
tcpdump: verbose output suppressed, use -v or -vv for full protocol decode
listening on ens33, link-type EN10MB (Ethernet), capture size 262144 bytes
18:17:46.383467 IP 192.168.50.132.52864 > 192.168.50.139.53: 61845 [1au] NS? . (40)
18:17:46.383948 IP 192.168.50.139.53 > 192.168.50.132.52864: 61845- 0/1/1 (45)
18:17:46.384862 IP 192.168.50.132.34827 > 192.168.50.135.53: 7047 [1au] A? www.itri.org
. (53)
18:17:46.385204 IP 192.168.50.135.53 > 192.168.50.132.34827: 7047- 0/1/1 (64)
18:17:46.385776 IP 192.168.50.132.42139 > 192.168.50.138.53: 64931 [1au] A? www.itri.org
g. (53)
18:17:46.386273 IP 192.168.50.138.53 > 192.168.50.132.42139: 64931* 1/1/3 A 2.2.2.22 (15)
```



# Q & A