

# A Simple BGP

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# BGP Policy is made by...

- Local Pref
- Prepends
- RPSL
- RPKI
- Communities

And other XX config options

**Ha! Easy! Love flexibility!**

# But is it simple?

140 RFC have already **been** written!

388 RFC drafts

Numerous BCPs...

**KISS is not for BGP?**

# It could be quite simple...

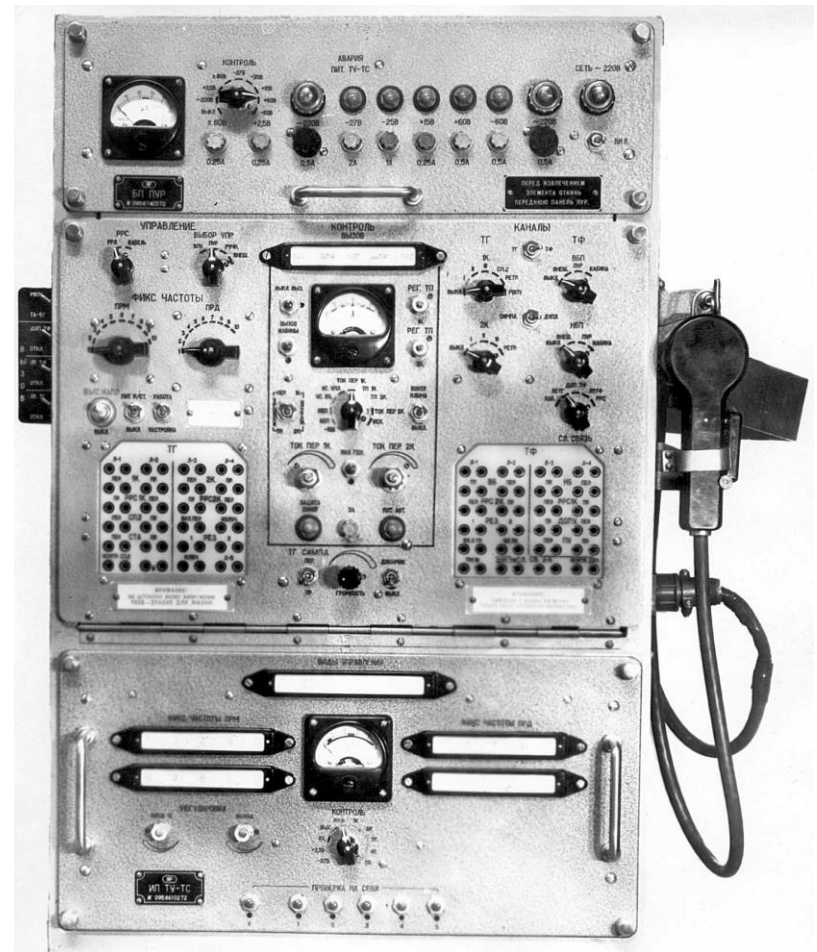
```
protocol bgp IAMOPERATOR {  
    local as MY_AS;  
    neighbor X.X.X.X as AS_PROVIDER;  
}
```

# The Great Gap

Expectation

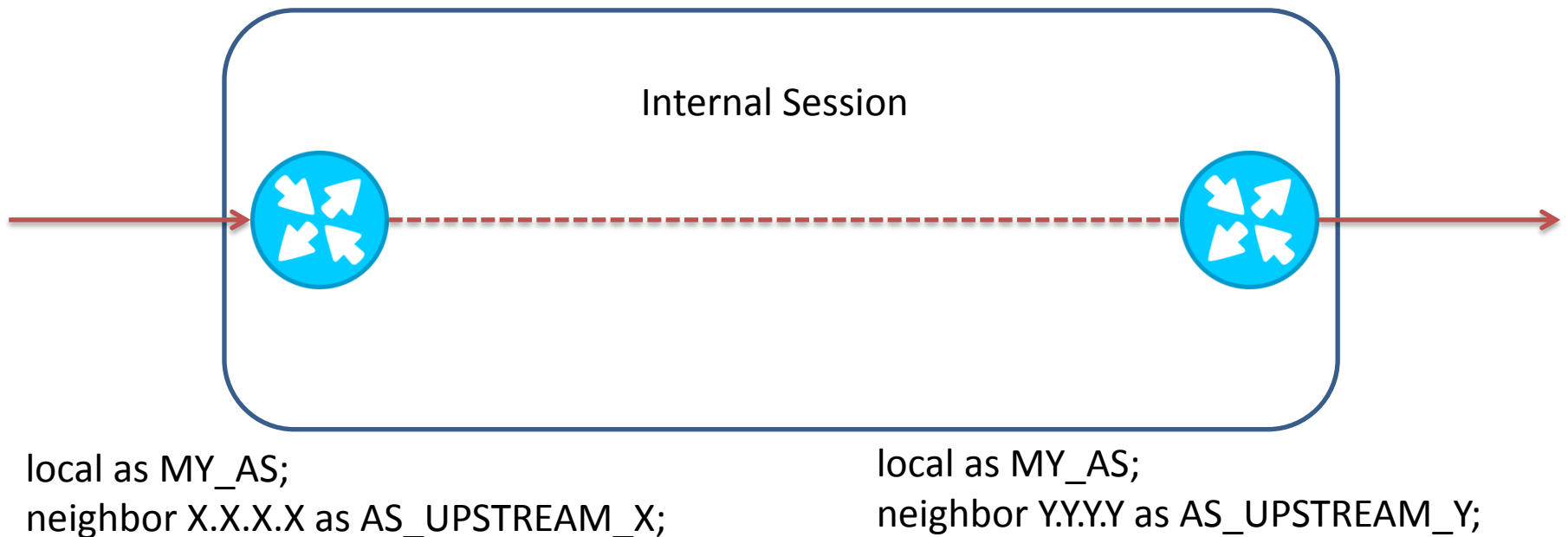


BGP Configuration

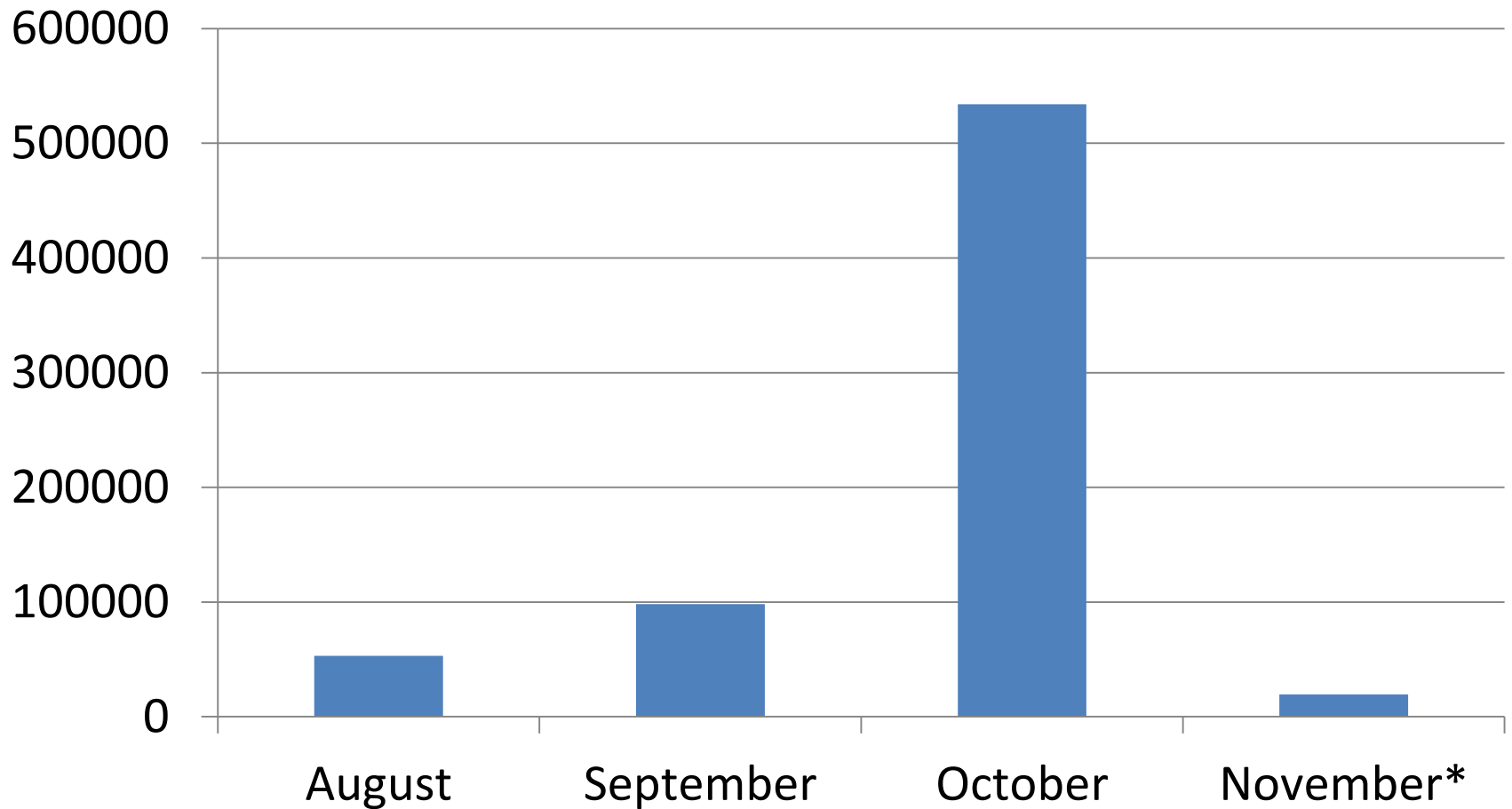


# A Simple Result

A simple route leak!



# Route Leak: stats



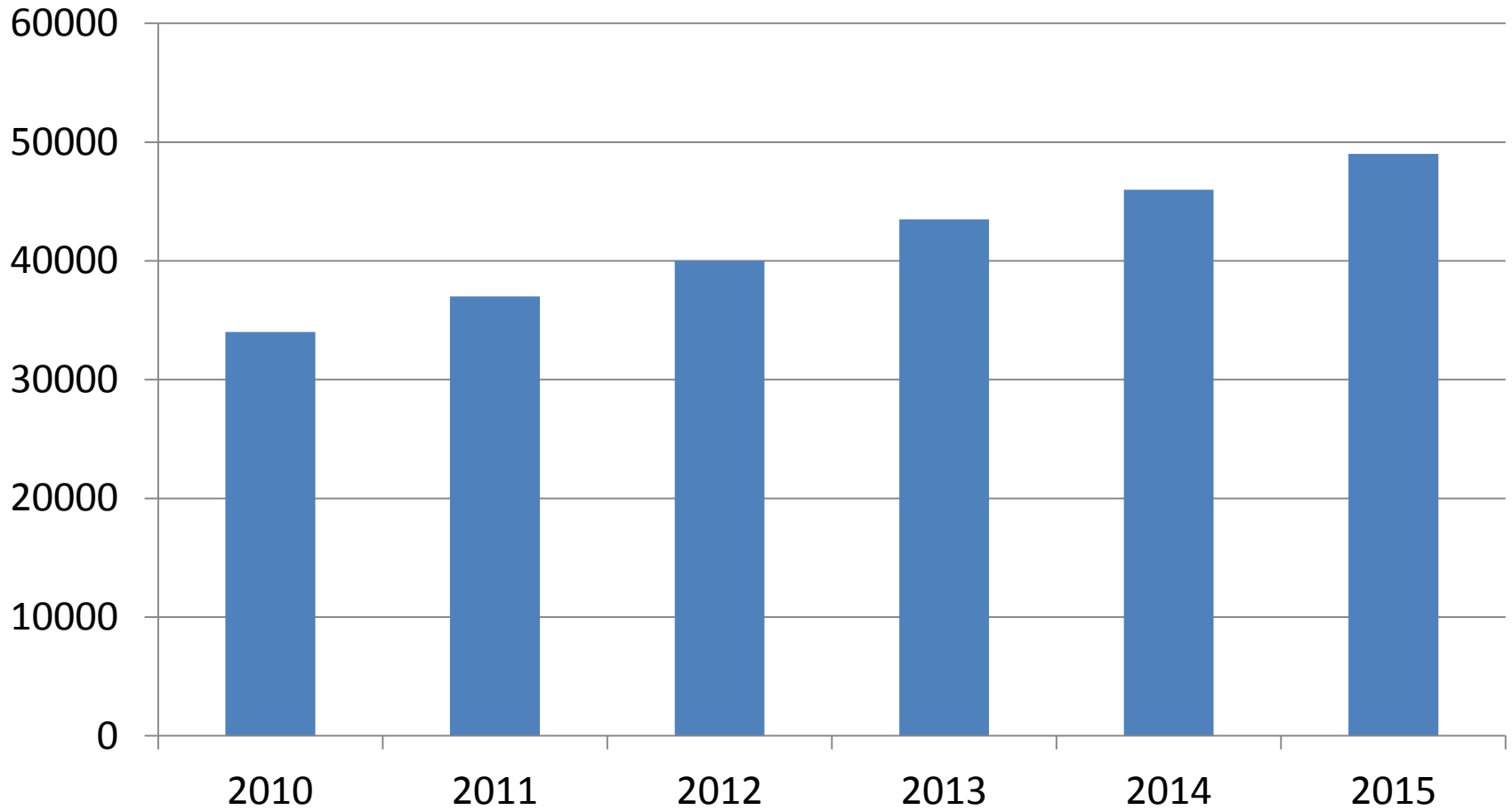
# Who is the *leaker*?



About ~1000 leakers affect... Everybody!



# Newcomers



# Imagine yourself on a highway...



# Option 1: Regulation



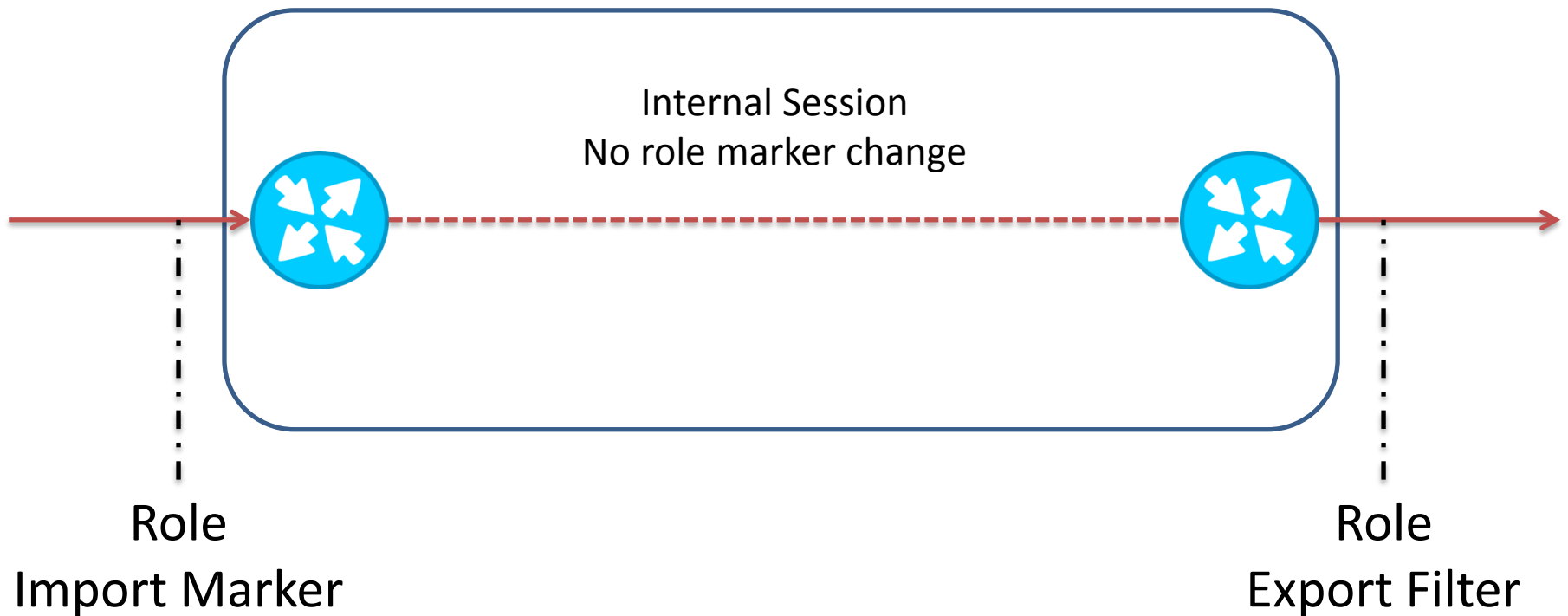
**bgpbusters!**  
**Are you afraid of leaks?**

# Option 2: A new BGP extension



# Meet The Neighbor Role

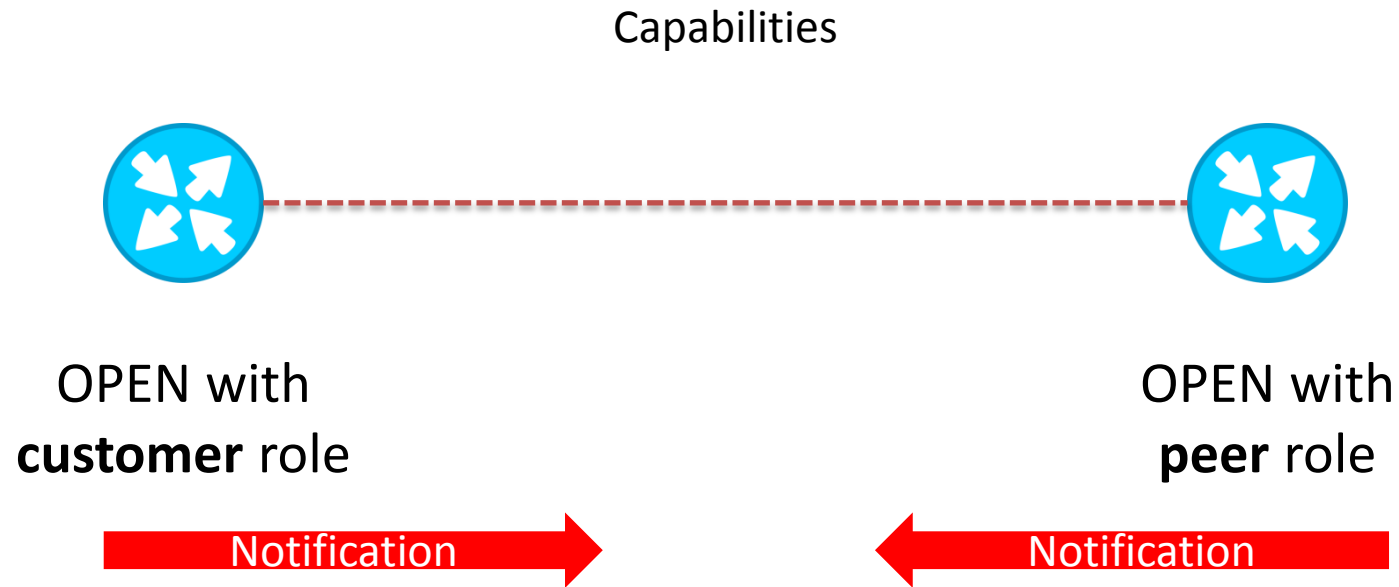
**4** Roles: customer, provider, peer, internal  
Optional non-transit attribute – Role Marker



# Idle state: No role set

```
mitradir@ubuntu:~/workspace/hll/bird$ ./bird -p -c bird.conf  
bird: bird.conf, line 11: Role must be set for each BGP protocol  
mitradir@ubuntu:~/workspace/hll/bird$ █
```

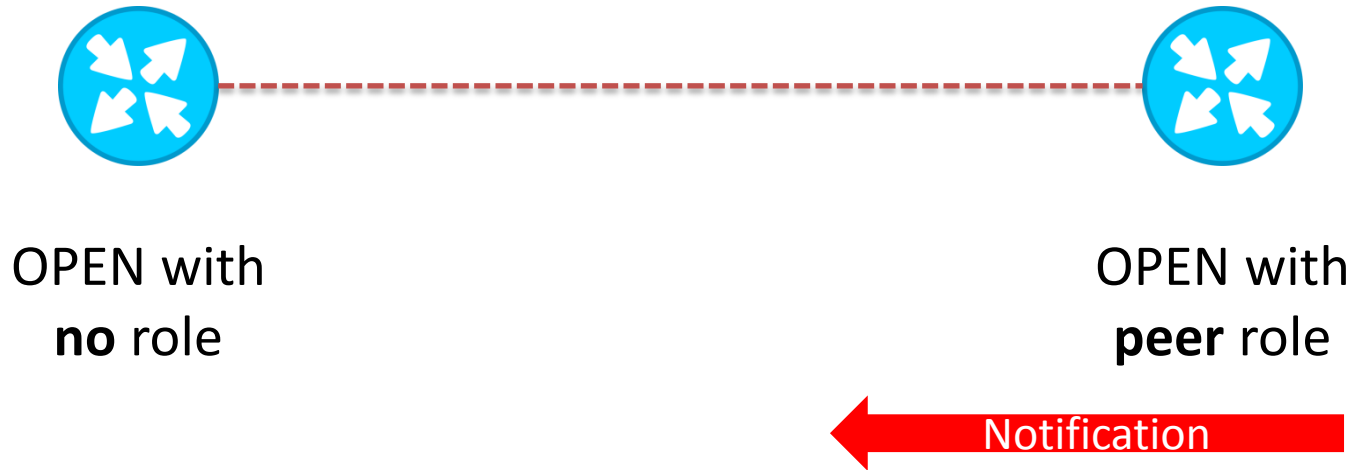
# Notification: The Wrong Role



**3 pairs** of non-conflict roles:

1. Peer <---> Peer
2. Customer <---> Provider
3. Internal <---> Internal

# Strict Mode



**Notification** if the role is not set in OPEN from the neighbor



# A Simple Config

```
protocol bgp IAMOPERATOR {  
    local as MY_AS;  
    neighbor X.X.X.X as AS_PROVIDER;  
    role provider  
}
```

# Benefits

## Backward compatibility

- Unknown optional non-transit attributes are just ignored
- Unknown capabilities should be just ignored!

## Route leak extinction:

- No **mistake** leaks
- Opportunity to control neighbor configuration

# Useful Links

Overview of protocol change:

[radar.qrator.net/tools/simple-bgp/](http://radar.qrator.net/tools/simple-bgp/)

Fork of BIRD routing daemon:

[github.com/QRatorLabs/bird/](https://github.com/QRatorLabs/bird/)

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