

FCT

Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA E ENSINO SUPERIOR

FCCN

Computação
Científica Nacional



The Portuguese Internet Exchange Point

FCT – Unidade FCCN
05/12/2019

WWW.FCCN.PT

GigaPIX in numbers

1

First

Neutral IP
interconnection
point in Portugal



4

Datacenters

- 3 x Lisbon
- 1 x Porto

3

8

MEMBERS

Including ISP's and CDN's

GigaPIX FACTS

Supports

IPv4
&
IPv6



Layer
2

Technology

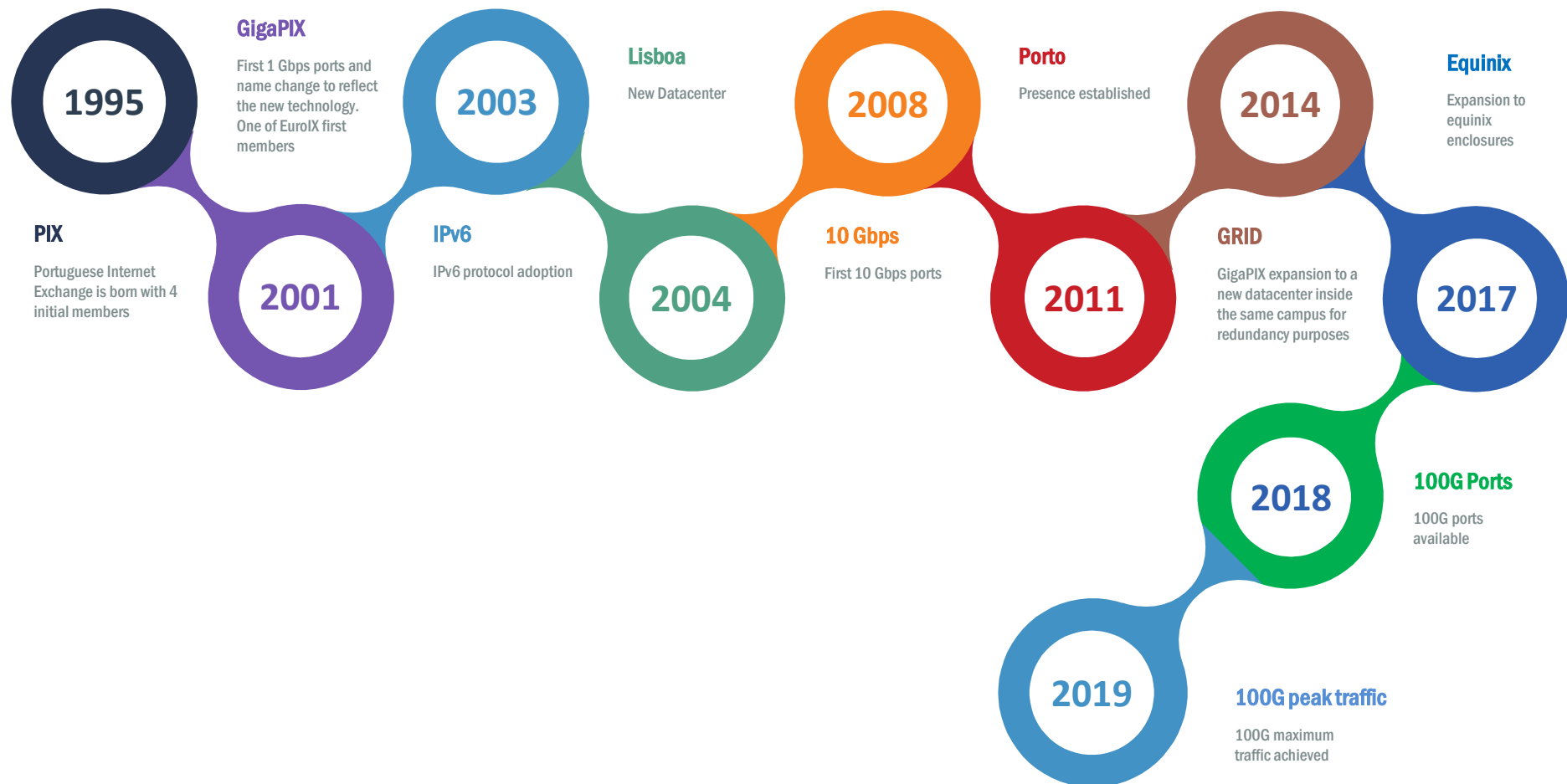
0 €

Cost per port
(except 100G)

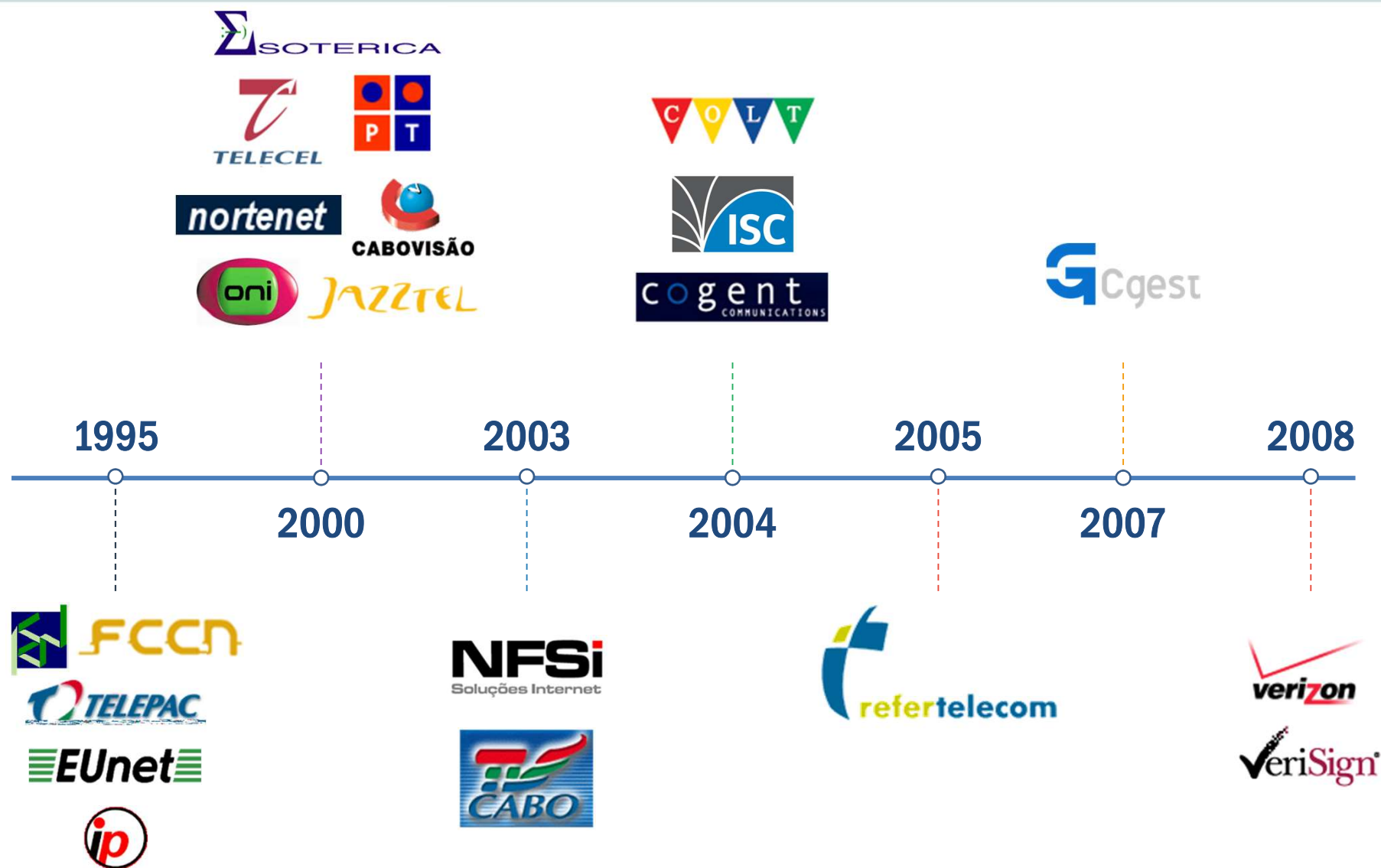
+ 100
Gbps

Traffic

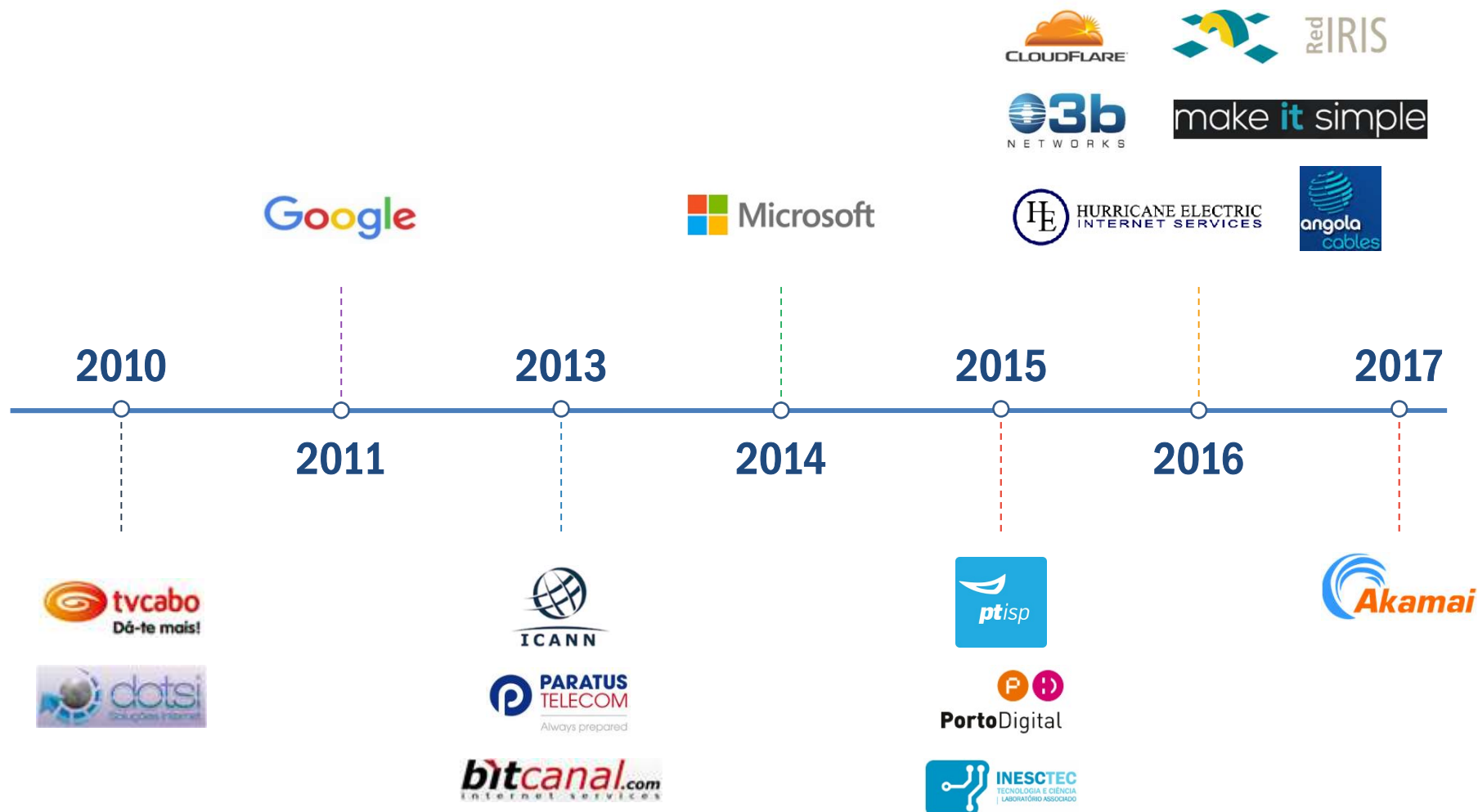
GigaPIX Achievements



Members



Members



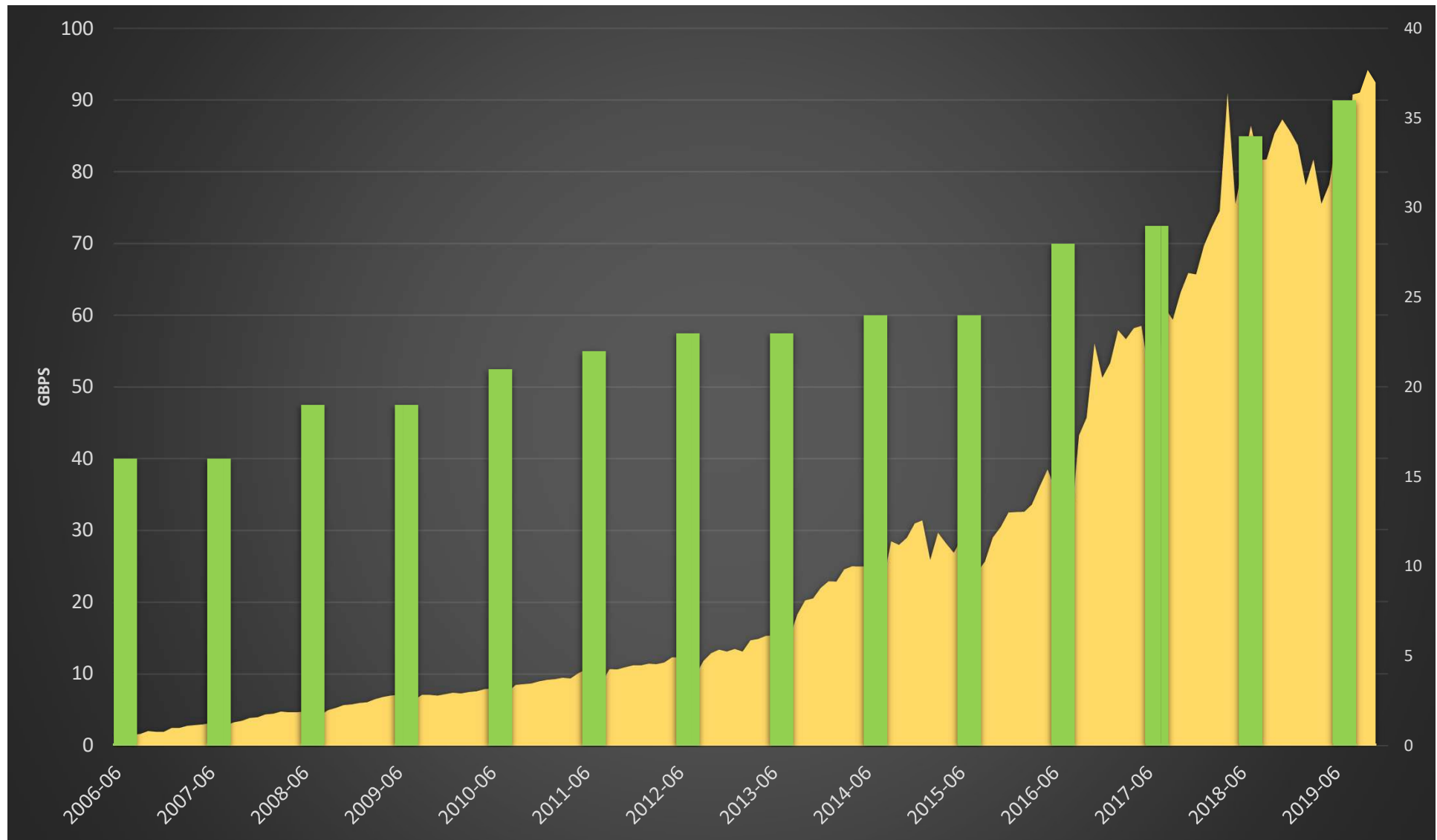
Members



All 38 Members



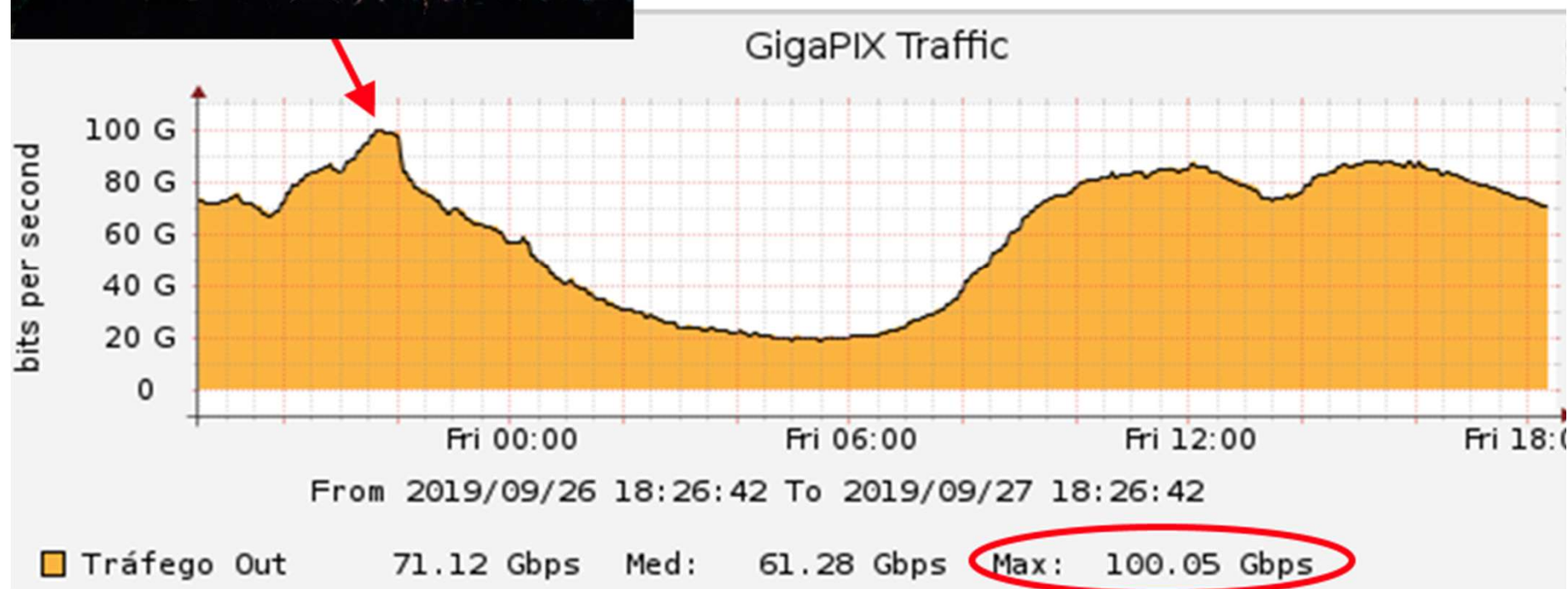
Member and traffic growth per year



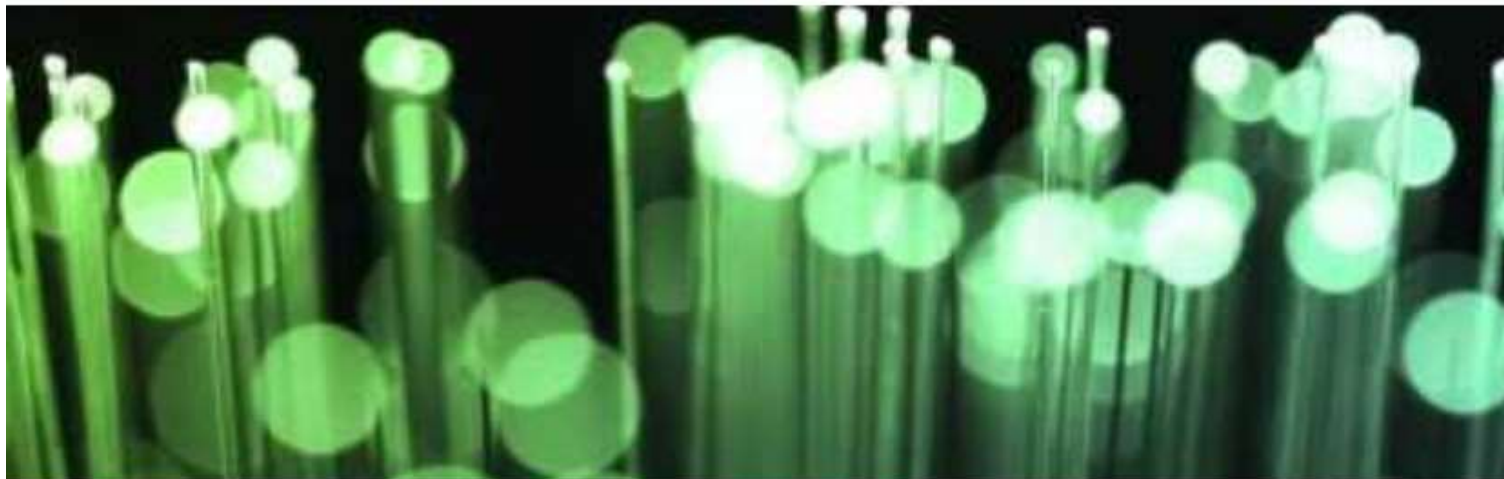
GigaPIX – 100G



1 0 0 G



GigaPIX 2017

[ABOUT US](#)[MEMBERS](#)[TECHNICAL](#)[BECOMING A GIGAPIX MEMBER](#)[CONTACTS](#)

WHAT IS GIGAPIX ?

GigaPIX is a not-for-profit Portuguese Internet Exchange Point managed and operated by FCT|FCCN.

This is a neutral Internet Exchange Point where traffic is switched at high speeds between connected organizations, improving the quality of IP interconnections in Portugal and preventing the usage of international transit links for traffic with local scope.



WHAT IS AN IXP ?

An Internet eXchange Point is a physical infrastructure through which different organizations such as Internet Service Providers, Content Delivery Networks (CDNs) or Cloud Providers exchange Internet traffic between their networks in an efficient way.

The traffic is exchanged by mutual peering agreements and enabled by BGP (Border Gateway Protocol).



WHERE ARE WE ?

GigaPIX is situated in three datacenters in Lisbon and one in Porto. In Lisbon, two of the rooms are in Av. do Brasil, inside the Campus do Laboratório Nacional de Engenharia Civil, and the other at Itconic, in Prior Velho.

The Porto address is Faculdade de Engenharia da Universidade do Porto.

Planned Activities 2020

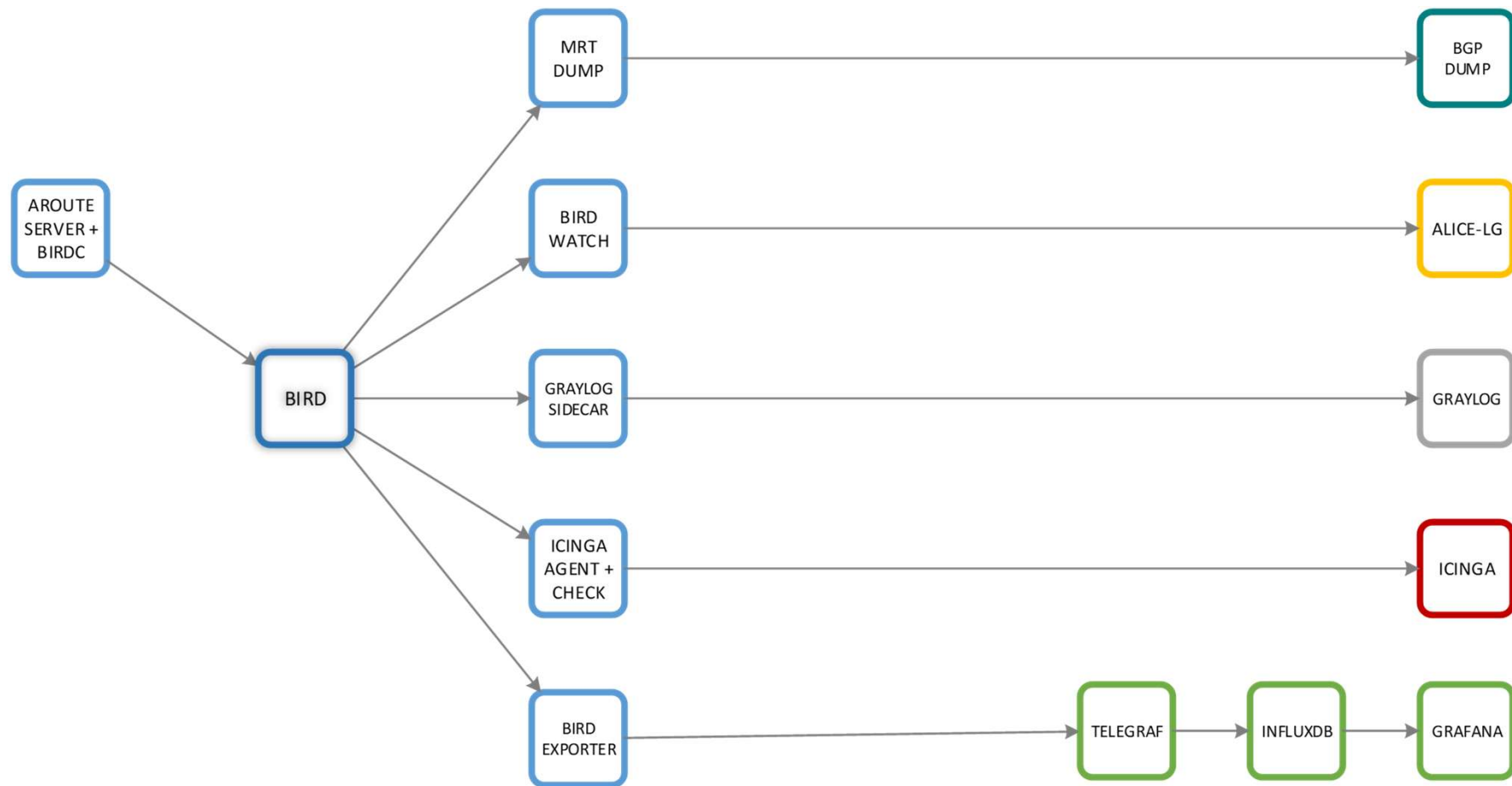
Route Server Architecture

- 1** Cluster
- 2** Groups
- 4** Containers

- +** Stability
- +** Physical Hardware
- +** 2 Peerings per LAN
- Complexity

Planned Activities 2020

Container Architecture



Planned Activities 2020

Route Server Upgrade

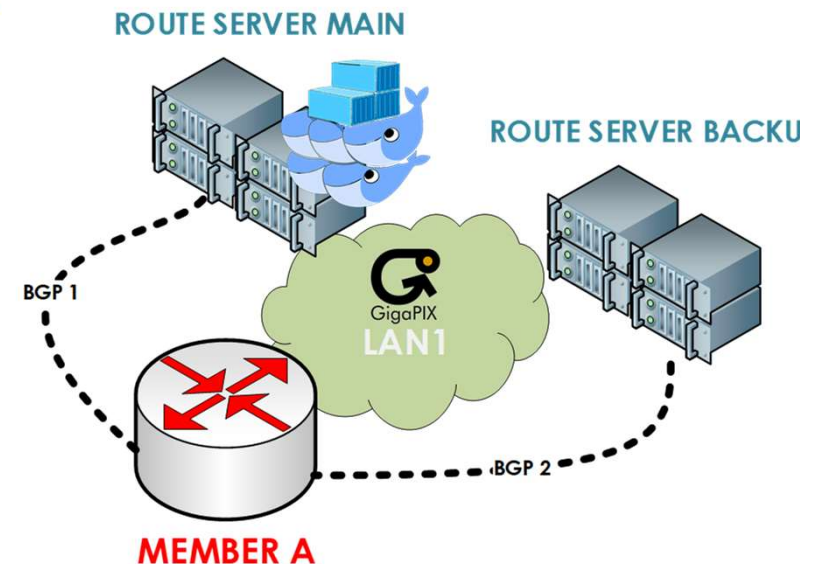


1

RS Availability

Micro-services adoption with docker clusters in RS1

- 1 Cluster with
- 2 Groups (one in SE06 another in Equinix)
- 4 Containers (2 LAN 1 and 2 LAN 2)
- Containers with Failover between the two servers
- +



2

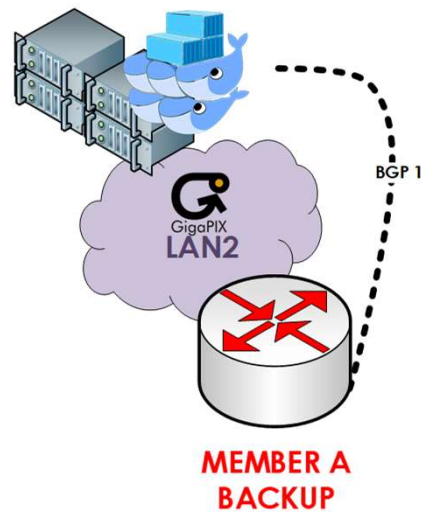
RS Session Redundancy

Two BGP sessions on LAN1 to isolated RSs

Planned Activities 2020

Route Server Upgrade

ROUTE SERVER LAN2

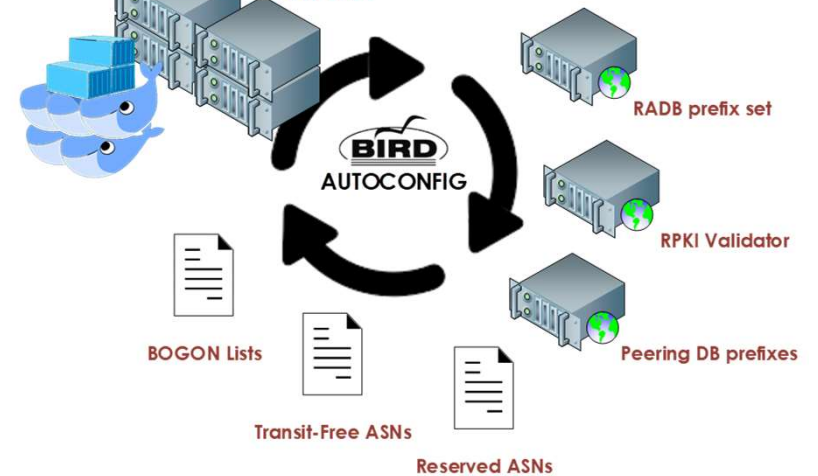


3

RS on LAN2

Another RS just for LAN2 connectivity

ROUTE SERVER MAIN



4

RS Filtering

BIRD configuration enrichment through dynamic and static sources

Planned Activities 2020

Route Server Upgrade

Alice - The friendly BGP looking glass - Mozilla Firefox

Alice - The friendly BGP look X +

localhost:7340/routeservers/rs0-example-v4/protocol

ROUTES ACCEPTED

Showing all of 2 routes

Network	Gateway	Interface	Metric	AS Path
193.104.52.0/24	193.136.250.145	eth0	100	49941
194.107.127.0/24	193.136.250.145	eth0	100	49941

ROUTES NOT EXPORTED

Due to the potentially high amount of routes not exported, they are only fetched on demand.

Load Routes Not Exported

Last Reconfig: Sunday, December 31, 0000 7:03 PM

Daemon is up and running

Generated 4 minutes ago.
Next refresh in a minute.

5

RS Looking-Glass

Online front-end for
route filtering
information

Planned Activities 2020

Route Server Filtering Guide

...More Security

RPKI invalid, bogons, reserved ASN will never reach a peer by default

...More Information

IRRdb prefix validation will be transmitted to peers

...More Control

Default RS drop policies might be changed on a peer basis

...More Services

Peers might use operational communities to:

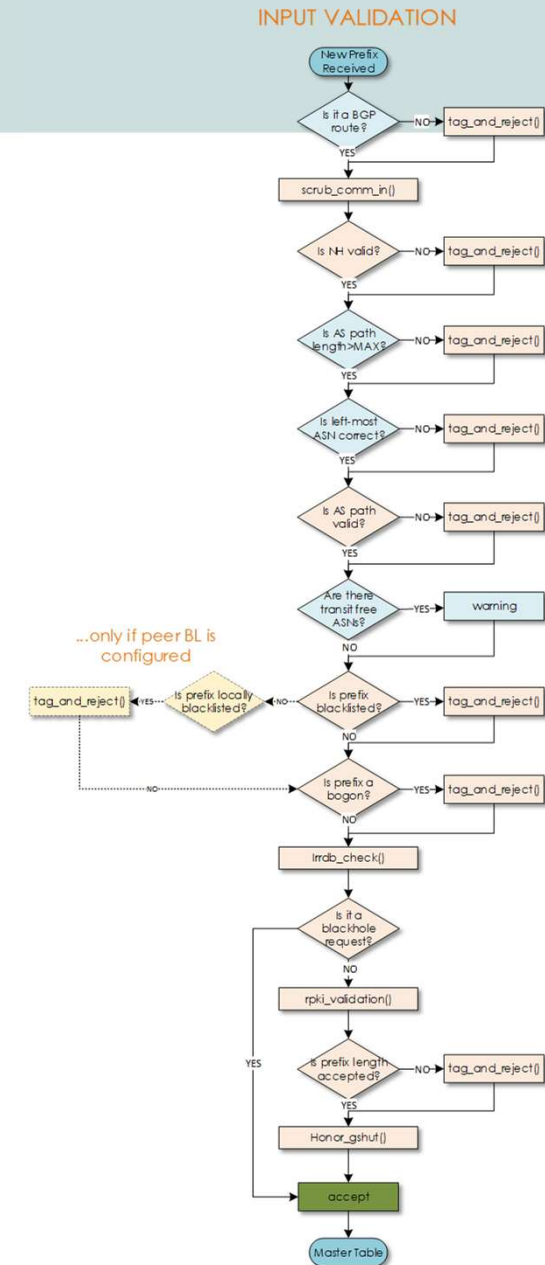
- **Prepend** 1x,2x,3x on a peer basis
- **Blackhole** host routes
- **Add** RFC 1997 communities on a peer basis
- **Filter** output routes on a peer basis

...More Visibility

A web LG will be responsible to provide visibility on filters

What Changes to Peers?

Not much: just configure a new session to the new RS as the default policies will only act on peer's added communities and will only drop RPKI Invalid routes.



Planned Activities 2020

Route Server Filtering Guide

...More Security

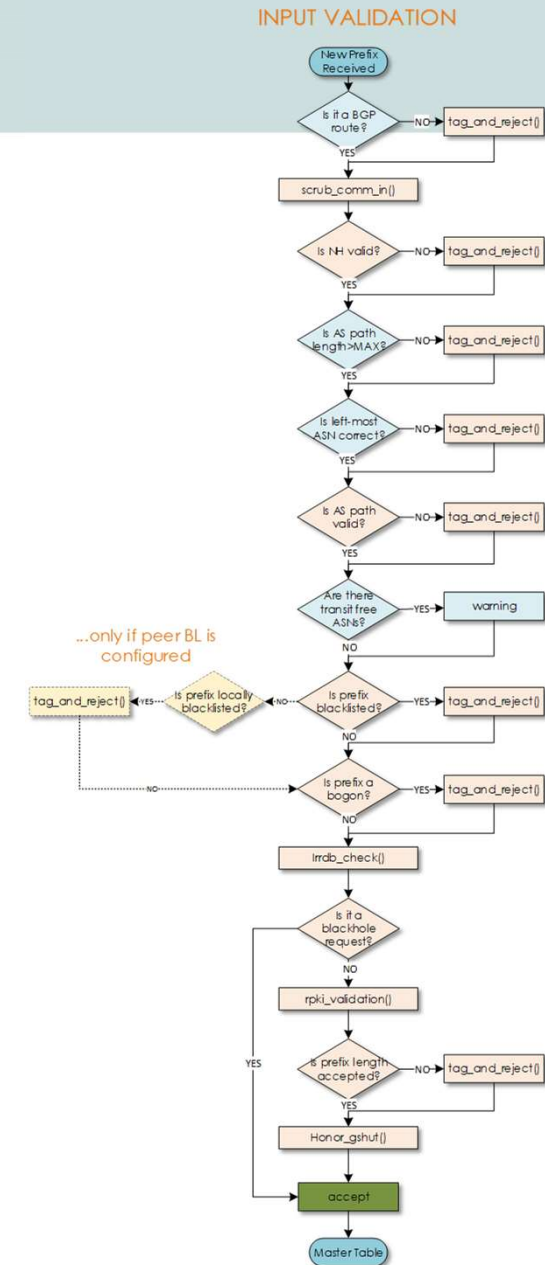
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Planned Activities 2020

Route Server Filtering Guide

...More Services

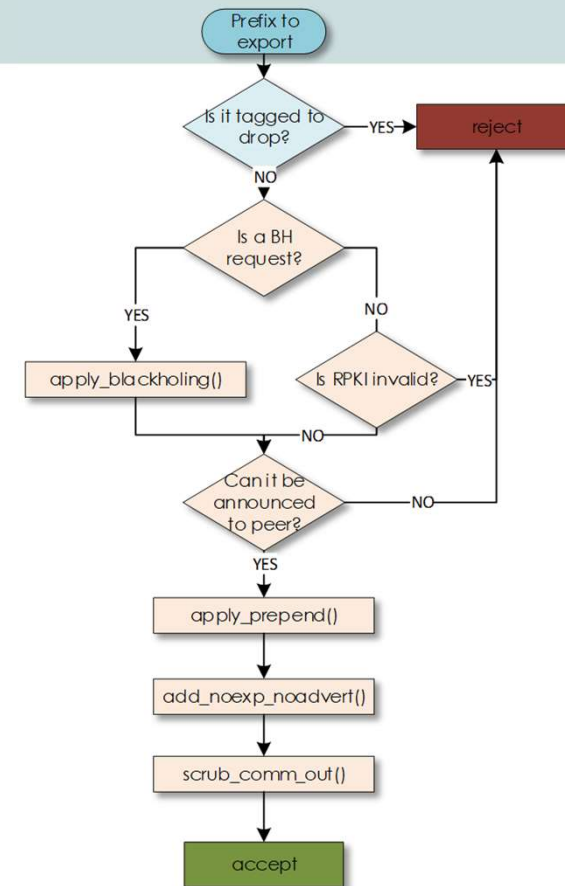
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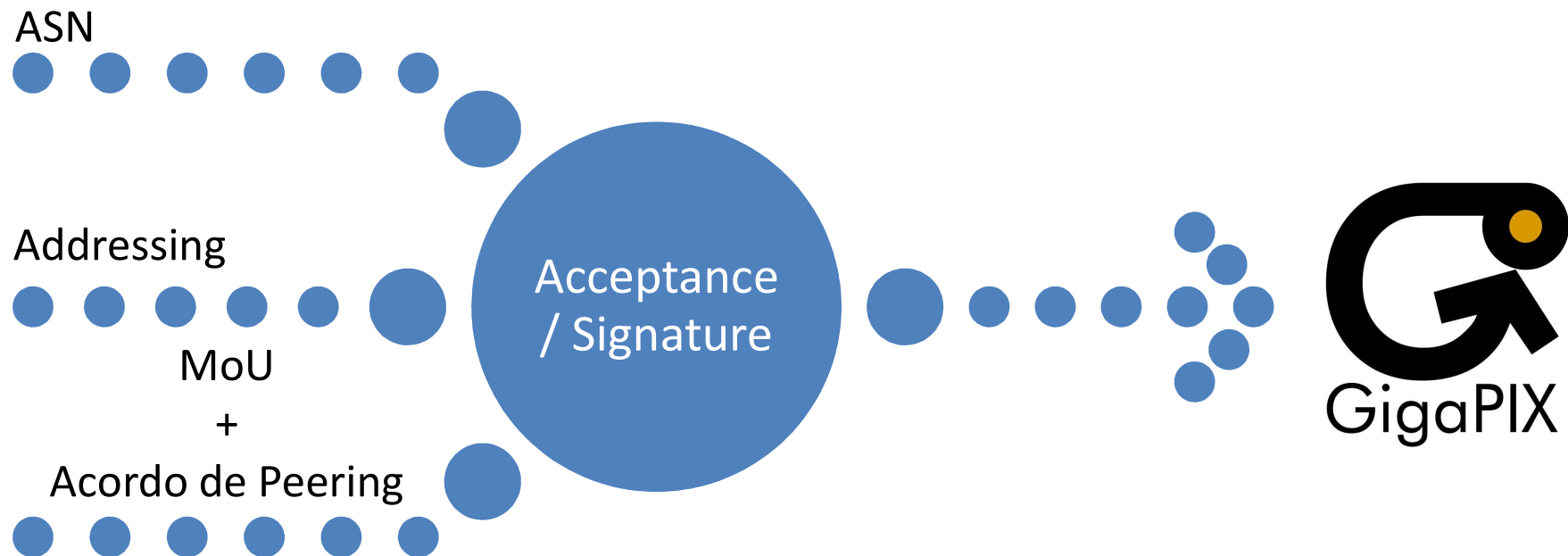
OUTPUT VALIDATION



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Connecting to GigaPIX




Connect to GigaPIX:

noc@fccn.pt

More info at: www.gigapix.pt

Thank You



WE WELCOME

YOU IN

GIGAPIX

