

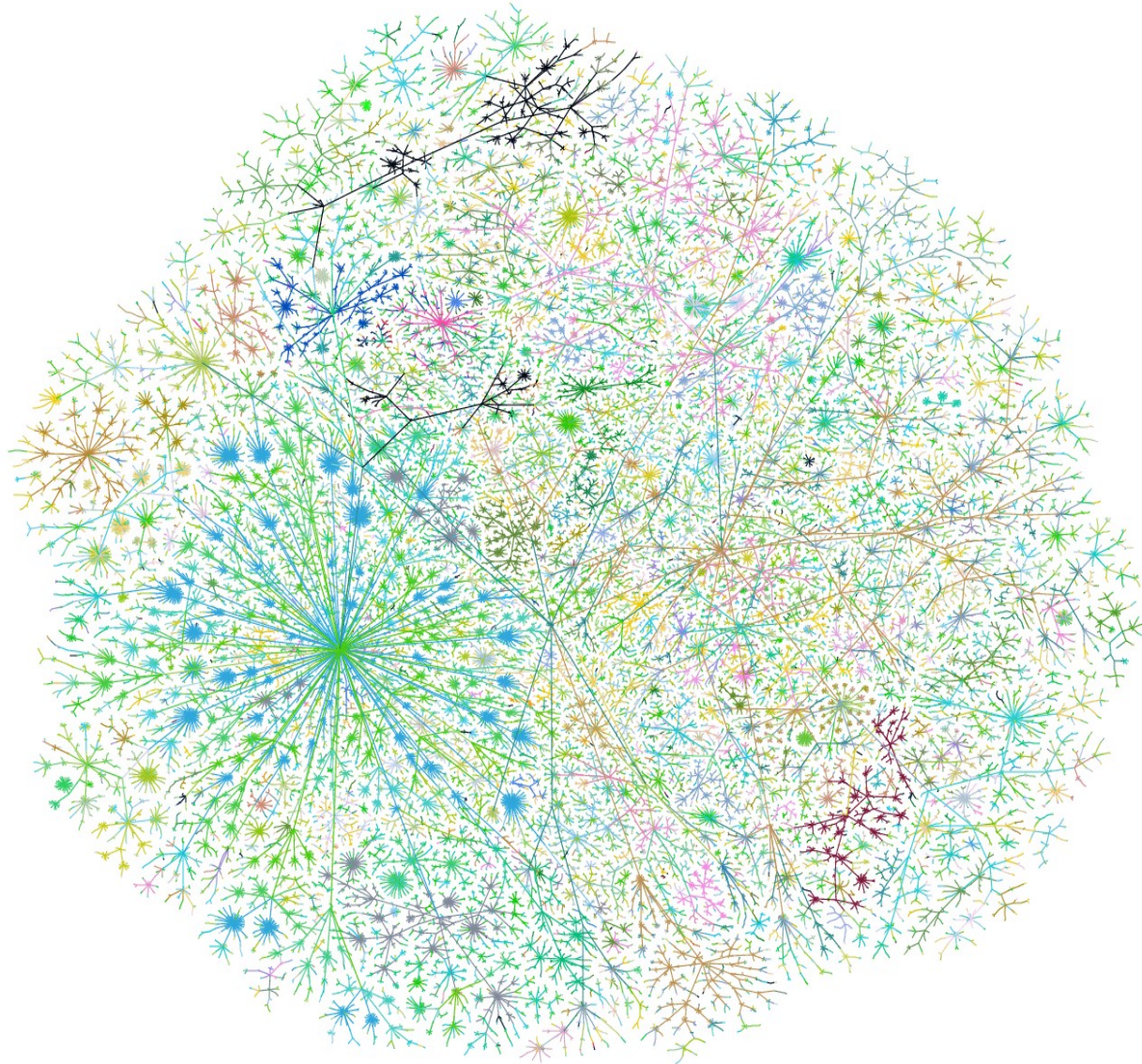
# Measuring the Internet with Portolan and Isolario

Valerio Luconi



NNTools2015 – Torino, 19th January 2015

# The Internet AS-level Graph



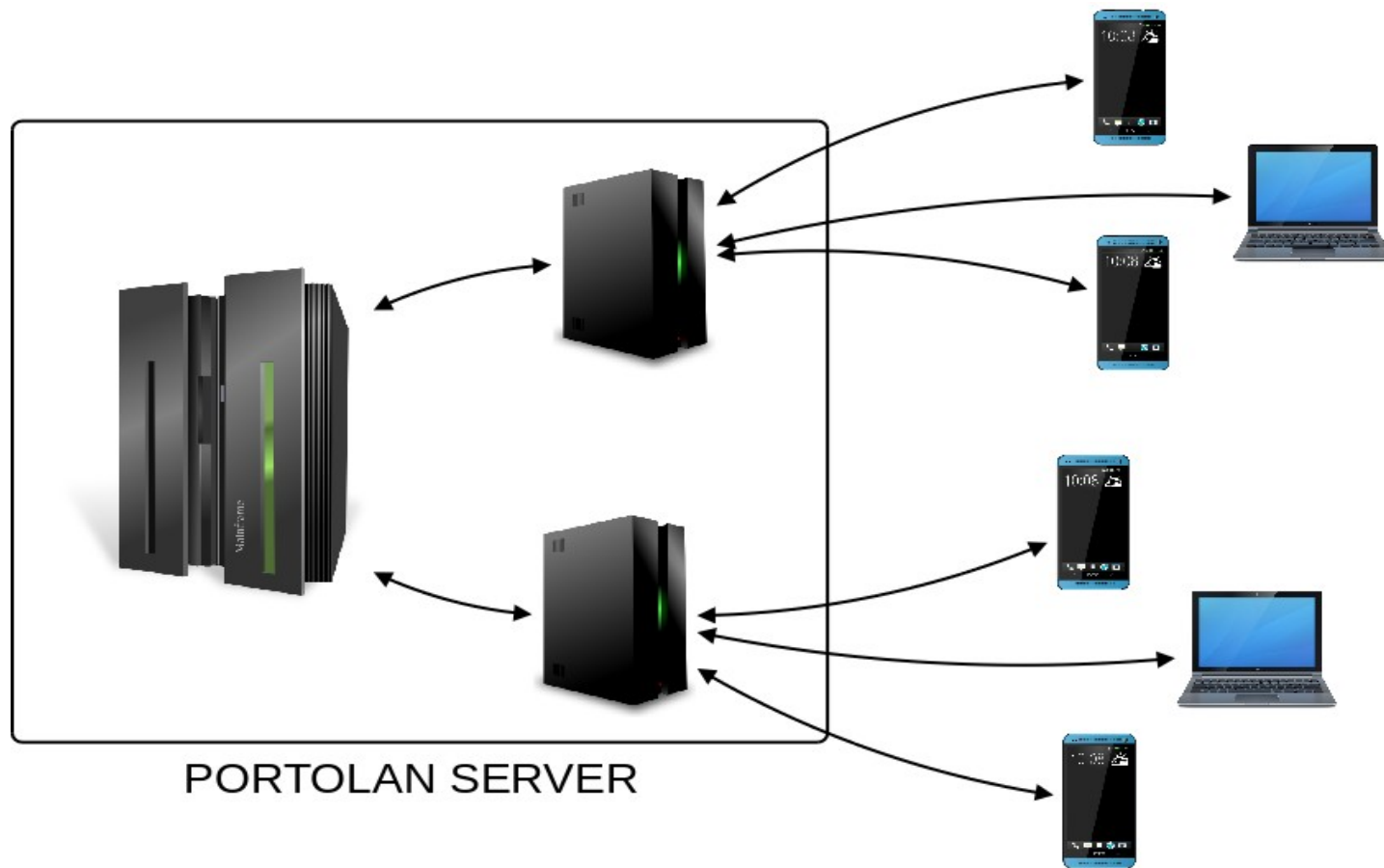


# Incompleteness



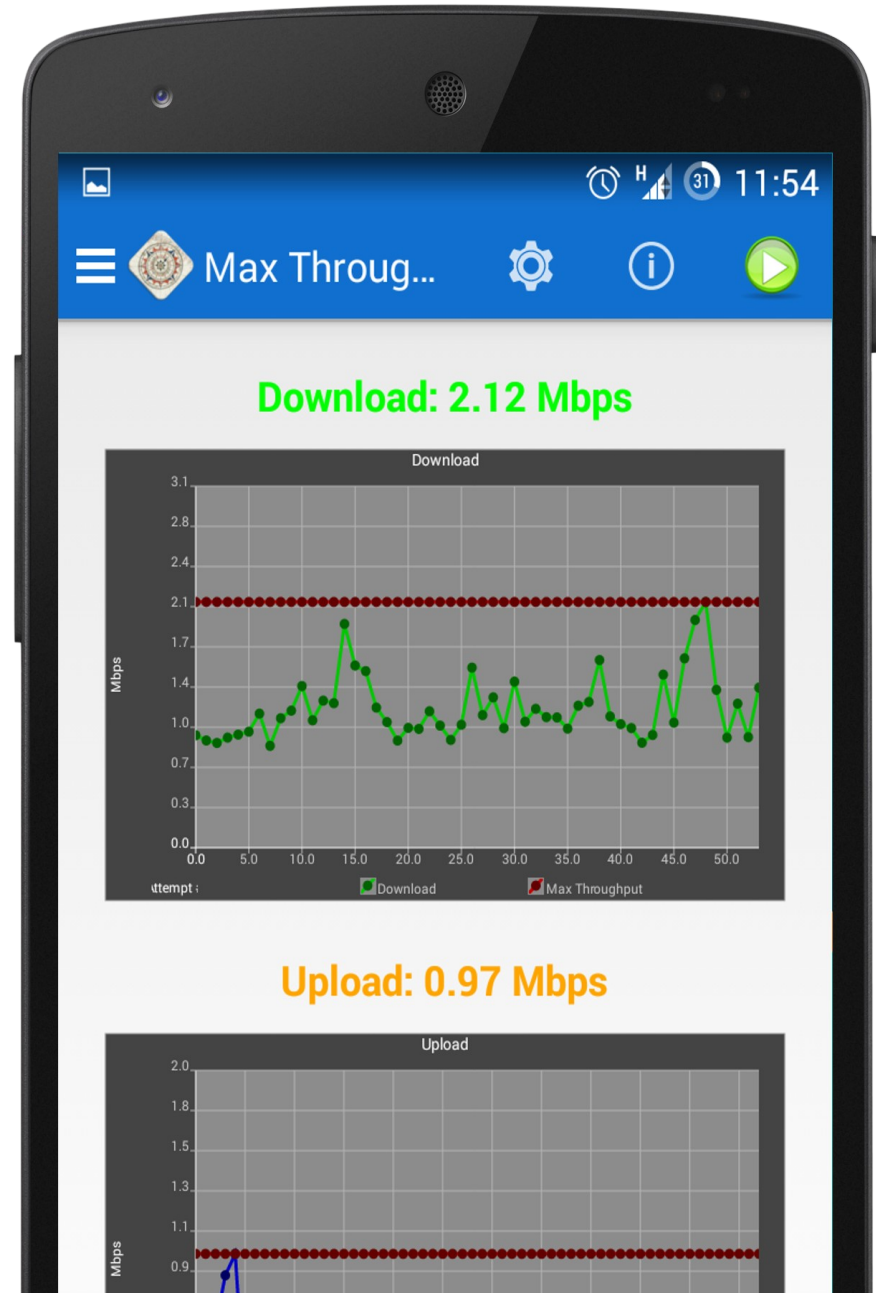
# Portolan

- **Active measurements** (traceroute) project based on **crowdsourcing**
- **Smartphone** and **desktop** app
- Network diagnostic tools to motivate users



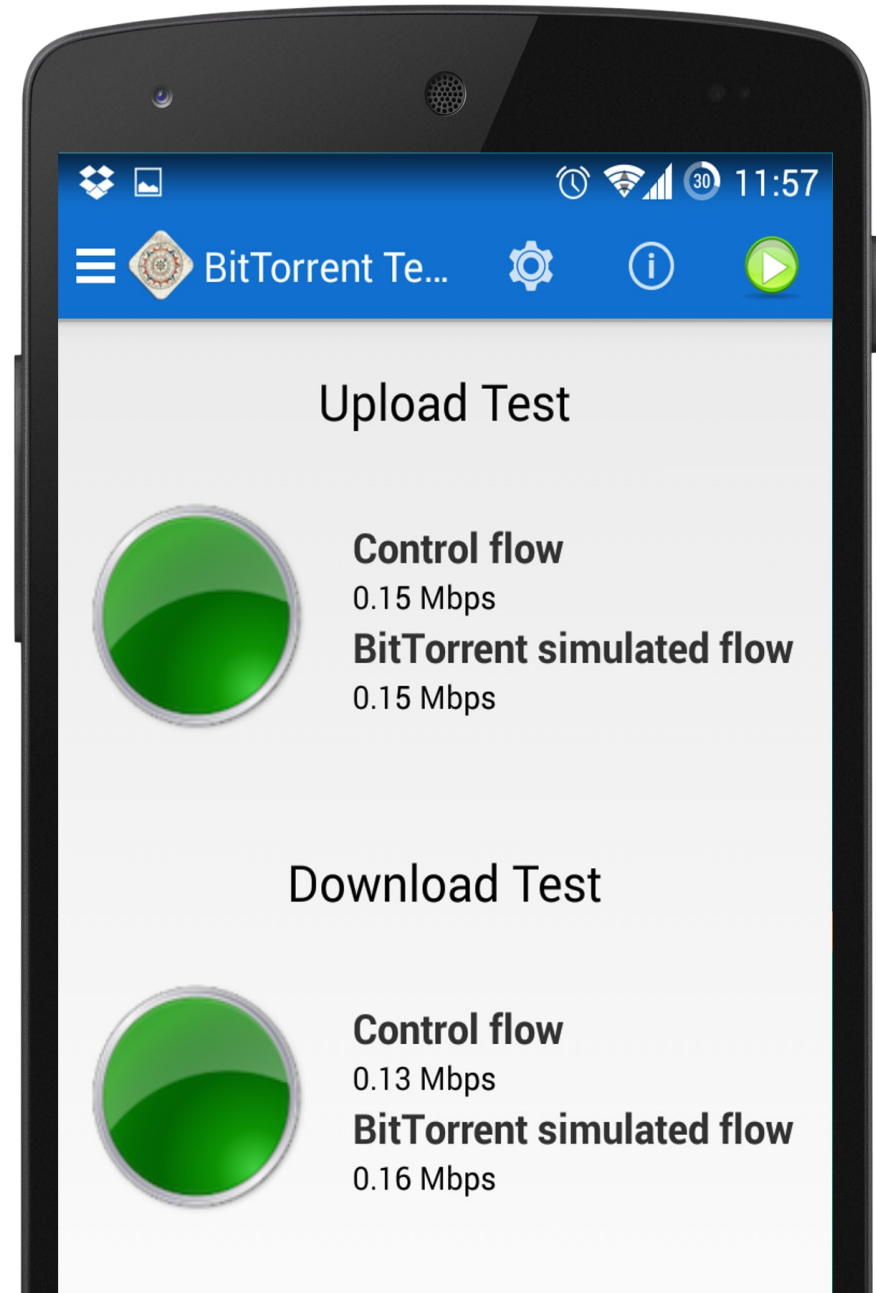
# Portolan Incentives

- **Max throughput**
- BitTorrent test
- Port map
- Many others...



# Portolan Incentives

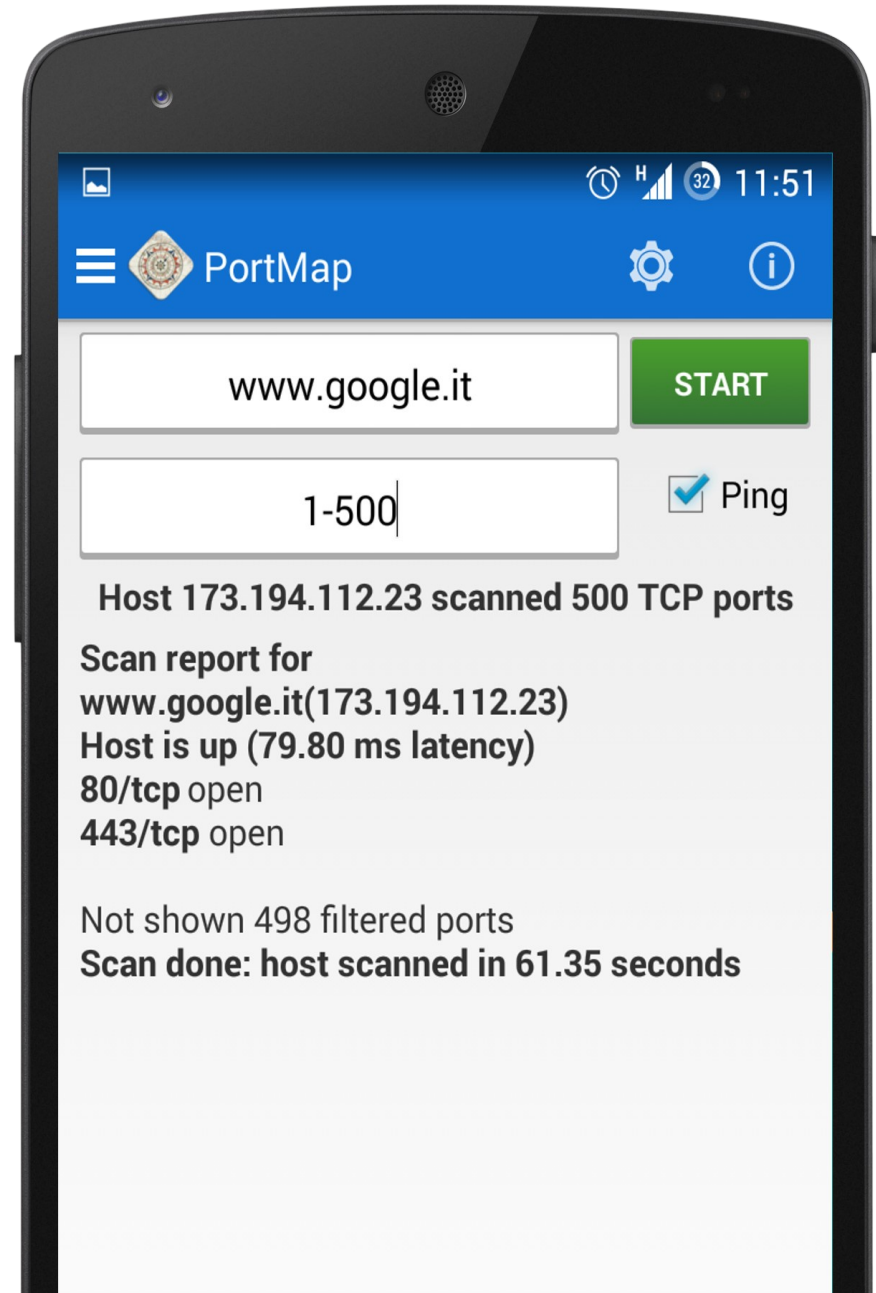
- Max throughput
- **BitTorrent test**
- Port map
- Many others...





# Portolan Incentives

- Max throughput
- BitTorrent test
- **Port map**
- Many others...



# Portolan Installs

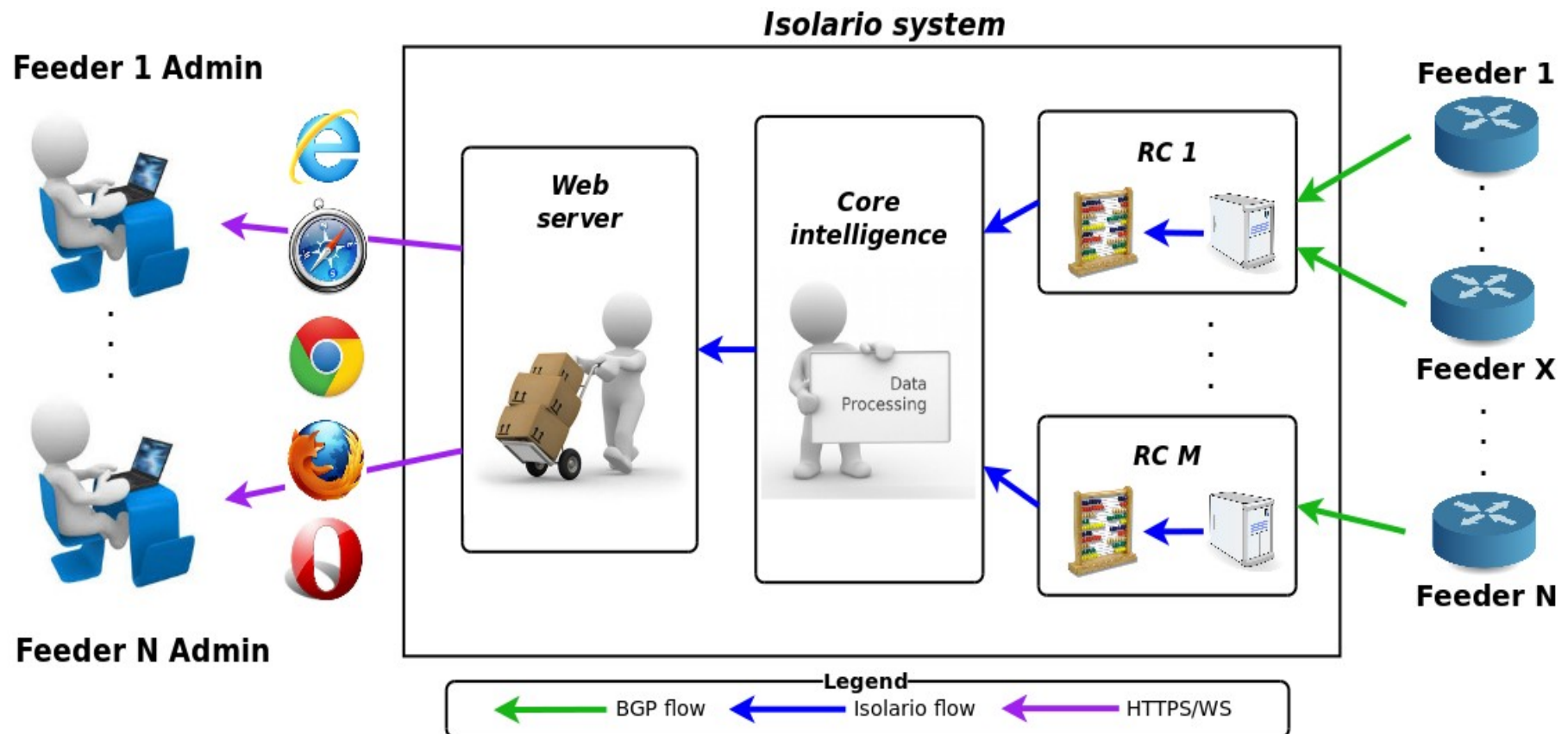


Currently **~300 active devices**



# Isolario

- **Route collector** project based on the **do-ut-des** principle
- Offers **real-time** monitoring services about the inter-domain routing in change of BGP session(s)



**AS 23752**

**NPTELECOM,NP,AS Nepal Telecommunications Corporation, Internet Services,NP**

My Feeders

Reachability Dependency per AS	Avg Distance
100%	4.5

192.12.193.233 x

IP space related to 202.70.64.0/21

REMOVE PREFIX

Cov %	Prefix	AS path	Communities	AT	Aggregator	Timestamp	A	W
12.5	202.70.64.0/24	2597 3356 9498 23752 i	2597:101 2597:111 2597:666 2597:1000			2014-11-23 09:16:05	0	0
12.5	202.70.64.0/21	2597 3356 6453 23752 i	2597:101 2597:111 2597:666 2597:1000			2014-11-25 15:33:49	3	0
		2597 3356 15412 15412 15412 15412 9304 23752 i	2597:101 2597:111 2597:666 2597:1000					
		2597 3356 9498 23752 i	2597:101 2597:111 2597:666 2597:1000					
			2597:101 2597:111 2597:666 2597:1000					
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			2597:101 2597:111 2597:666 2597:1000					
			2597:101 2597:111 2597:666 2597:1000					

### A/W Events

Announcements  
Number of events: 3 (100.0%)

- Announcements (100.0%)
- Withdraws (0.0%)

### Reachability

- Reachable IPs (100.0%)
- Unreachable IPs (0.0%)

### Reachability Dependency per AS

Top ten ASes

AS	Percentage of IP space reached through AS
AS 23752	100
AS 3356	100
AS 9498	62.5
AS 3549	50
AS 7473	37.5
AS 9304	25
AS 9829	12.5
AS 6453	12.5
AS 15412	12.5

Percentage of IP space reached through AS

- Routing Table Viewer, Flow Viewer, Real Time Flap Detector, **My Subnet Reachability**
- Available soon: Historic services, Alerting system, Mobile App, ...

# Isolario current feeders

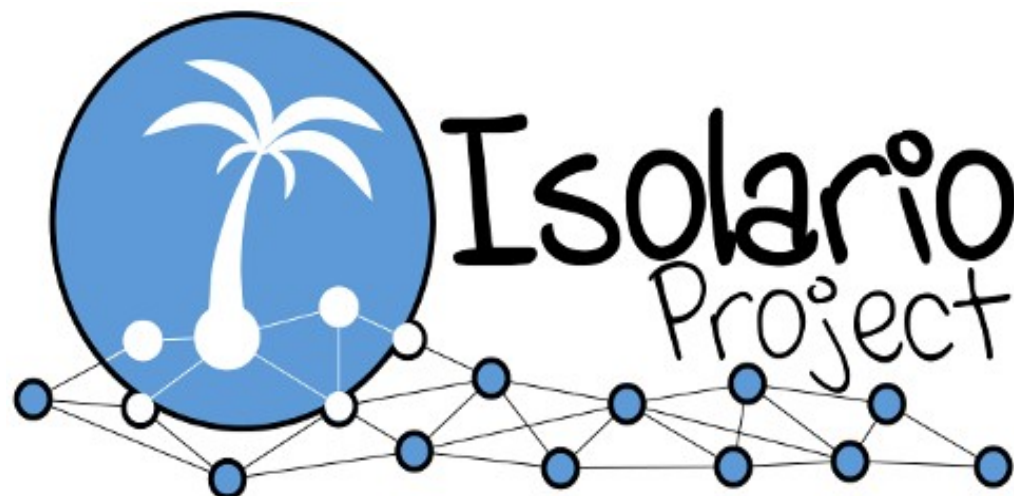
- 1) AS 2597 (Registry of ccTLD.it)
- 2) AS 6882 (Regione Toscana)
- 3) AS 12637 (Seeweb S.r.l.)
- 4) AS 12835 (Trentino Network)
- 5) AS 16004 (MIX S.r.l.)
- 6) AS 16076 (Infotech S.r.l.)
- 7) AS 20912 (Panservice)
- 8) AS 25309 (Consorzio TOP-IX)
- 9) AS 24796 (Consorzio NAMEX)
- 10) AS 31638 (Lepida S.p.A.)
- 11) AS 39120 (Convergenze S.p.A.)
- 12) AS 41497 (Qcom S.p.A.)
- 13) AS 197440 (Registry of ccTLD.it)
- 14) AS 197835 (Fusolab Onlus)



If you want to participate please contact us  
[info@isolario.it](mailto:info@isolario.it)



# Thank you!



## INFO & DATA

<http://portolan.iet.unipi.it>

<https://www.isolario.it>