Improving Macedonia internet connectivity with RIPE Atlas

How a Idea could become reality ...

Vladislav Bidikov, FCSE, UKIM, Macedonia, 17.11.2015

About me

- Programmer by heart
- 5 years ago was asked to be part of the HPC project on FCSE
- Experience in networking for 10+ years
- Started exploring the RIPE Atlas project 2 years ago

RIPE

Basic idea

- The idea started before RIPE SEE4 (Belgrade 2015)
- Main objective: provide relevant information about nation wide status of ISP connectivity
- RIPE Atlas looked like the first (and only) solution

Source (by ASN)
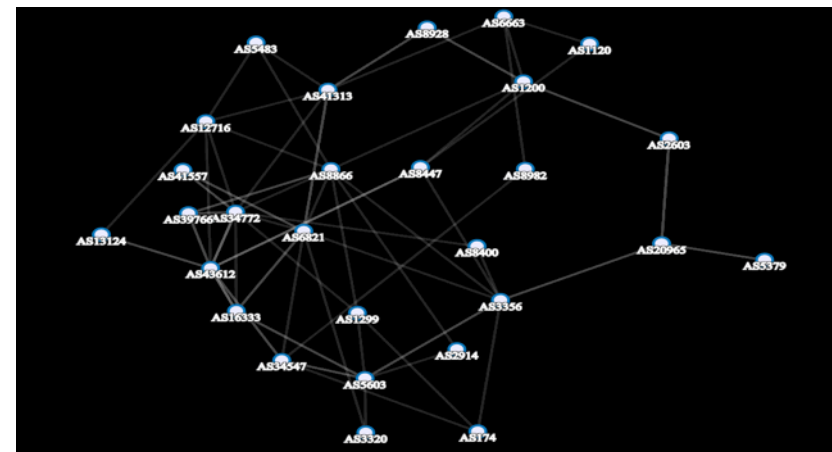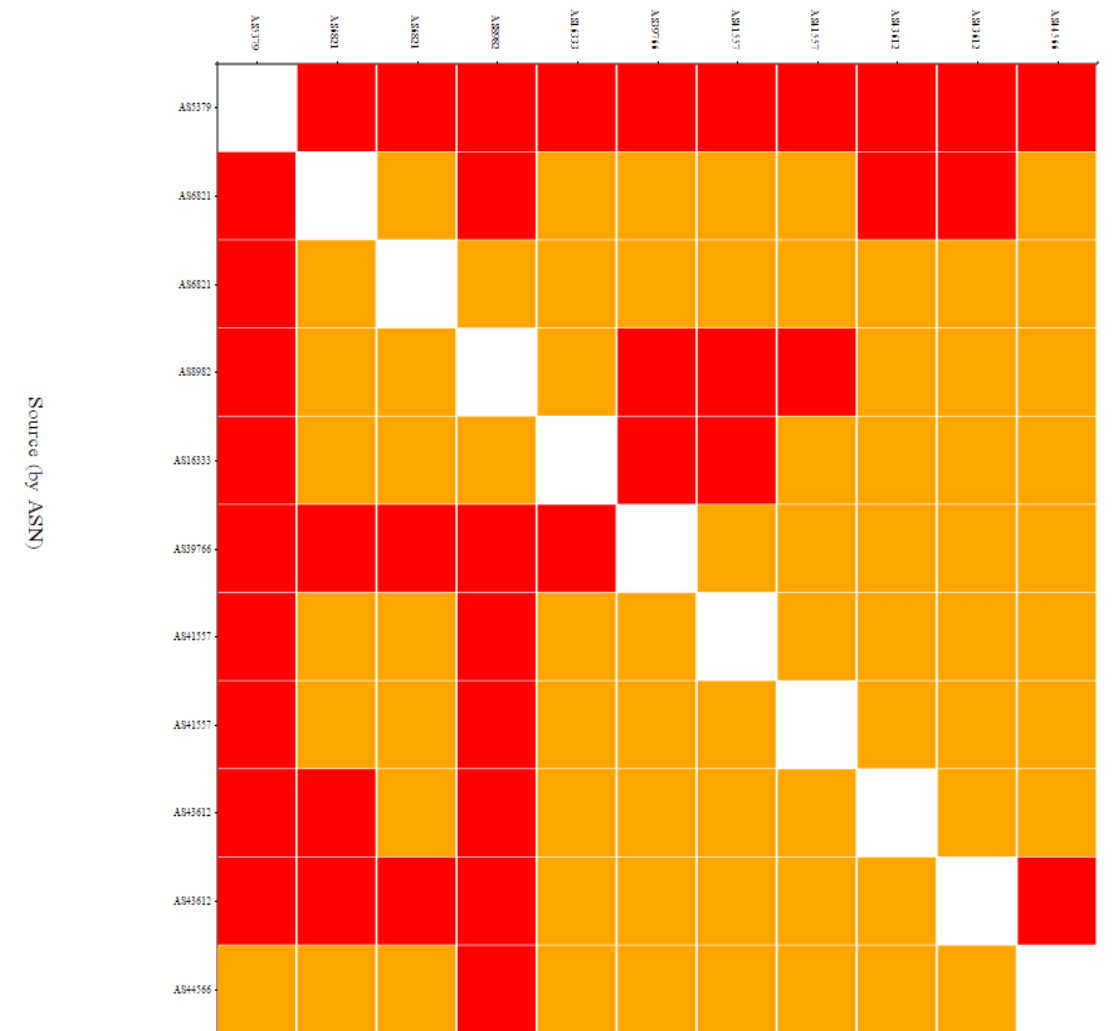
The idea

- Use existing RIPE probes (2 in University Networks, 7 in ISP)
- Install Probe in Every Medical center in MK (7 in Skopje, 43 in Other cities)
- Create a map and provide regular reports for the public
- Show to ISP the need to peer

RIPE

Current RIPE Atlas status - MK

Id	ASN v4	ASN v6	Country	Description	Connection Status	
18494	8982		🇲🇰	nca-skp	☁ 5 days, 9 hours	🔓
13320	16333		🇲🇰		☁ 1 week, 4 days	🔓
12743	6821		🇲🇰		☁ 7 hours, 14 minutes	🔓
10166	5379		🇲🇰	FINKI Server Room (TMF)	☁ 3 days, 10 hours	🔓
10162	41557		🇲🇰	Telekabel, Stip	☁ 1 week	🔓
10132	44566		🇲🇰		☁ 16 hours, 31 minutes	🔓
10126	43612		🇲🇰	blizoo	☁ 1 week, 2 days	🔓
10119	41557		🇲🇰	Telekabel, Skopje	☁ 1 week	🔓
10118	6821		🇲🇰	Telekabel, Bitola	☁ 1 week, 3 days	🔓
10117	34772		🇲🇰	Net Kabel - Strumica	☁ 2 hours, 12 minutes	🔓
10116	16333	16333	🇲🇰	ONE Guest Network	☁ 1 week, 4 days	🔓
10113	5379		🇲🇰		☁ 1 week	🔓
4573	16333	16333	🇲🇰	ONE Telekom	☁ 1 week, 4 days	🔓
4360	43612	6939	🇲🇰	Kika hacklab, Skopje	☁ 1 week, 2 days	🔓

Id	ASN v4	ASN v6	Country	Description	Connection Status	
23659	16333		🇲🇰	one-adsl	☁ 3 months, 1 week	🔓
16203			🇲🇰	Telesmart-node	☁ 1 year, 2 months	🔓
11455	199128		🇲🇰	alifaan.com	☁ 4 months, 2 weeks	🔓
10861			🇲🇰		☁ 1 year, 10 months	🔓
10164			🇲🇰		☁ 1 year, 10 months	🔓
10154			🇲🇰	5 Net ISP	☁ 2 years, 3 months	🔓
10140			🇲🇰		☁ 1 year, 10 months	🔓
1220			🇲🇰	SET	☁ 1 year, 9 months	🔓
773			🇲🇰	Neotel	☁ 2 years, 9 months	🔓

9 disconnected (and probably abandoned)

14 connected

No RIPE Atlas Anchor

RIPE

The idea (part 2)

- Distribute probes to Medical facilities (legal support from the Ministry of Health), 50-100 probes
- Change the rulebook for quality of service imposed by the Law for communications to force ISP to have 3+ probes if they are in more than one city and 2+ probes in one city. (around 30 probes)
- Help MARNET in the creation of MATRIX (the Macedonian internet exchange (we have the collocation space, have power and cooling, missing switches and legal framework)

Vladislav Bidikov, FCSE, UKIM, Macedonia, 17.11.2015

The idea (part 3)

- Improve the University Fiber network and join MATRIX (upgrade to 10G capacity)
- Install RIPE Atlas Anchor (probably in FCSE)
- Bring in the content player (Google, Facebook,...)
- Bring root DNS instances (DNS service for MK users is terrible – most advanced users use Google dns or OpenDNS)

RIPE

Possible risks

- Problem with probe distribution (shipping/import costs, people forget about probes, USB drives get stolen, ISPs disconnect probes as possible "trouble makers"
- Procurement procedures are difficult and lengthy – Council of experts for procurements, lowest price criteria, vendor neutrality
- Funding – University does not care for IT infrastructure, exploring possible donations in equipment, network equipment is 10+ years old
- Political decisions

RIPE

Possible game changers

- The Faculty (FCSE) has the staff (experts, engineers) for the project
- Some of us are very influential in ISP industry and can help bring ISP to the MATRIX
- Big companies can see the benefit and help with donations
- Cooperation with other projects: GEANT, eduroam, RIPE Atlas...
- Cooperation with the industry: Big transit providers, hardware vendors, Content providers …

RIPE

Questions?

vladislav.bidikov@finki.ukim.mk
@bidikov

RIPE