What can go wrong?

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Research and Innovation
Mauritius Peering Roadshow 2019

Route leaks and hijacks

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June 29, 2019

Following

So Airtel AS9498 announced the entire IPv6 block 2400::/12 for a week and no-one notices until @tstrickx finds out and they confirm it was a typo of /127. Below is @GTTCOMM happily accepting the prefix. The state of routing security is 😱. stat.ripe.net/widget/bgplay#   …

Jerome Fleury
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July 9, 2019

Following

Today's BGP horror is Etisalat hijacking 11.11.11.0/24 (DoD) for an entire month (removed today), with their transit Sparkle AS6762 happily accepting it even though there's no route object, and redistributing to the elite club of Tier1. Credit @tstrickx stat.ripe.net/widget/bgplay#   …

CLOUDFLARE   BLOG   WHAT WE DO   SUPPORT   COMMUNITY   DEVELOPERS

How Verizon and a BGP Optimizer Knocked Large Parts of the Internet Offline Today
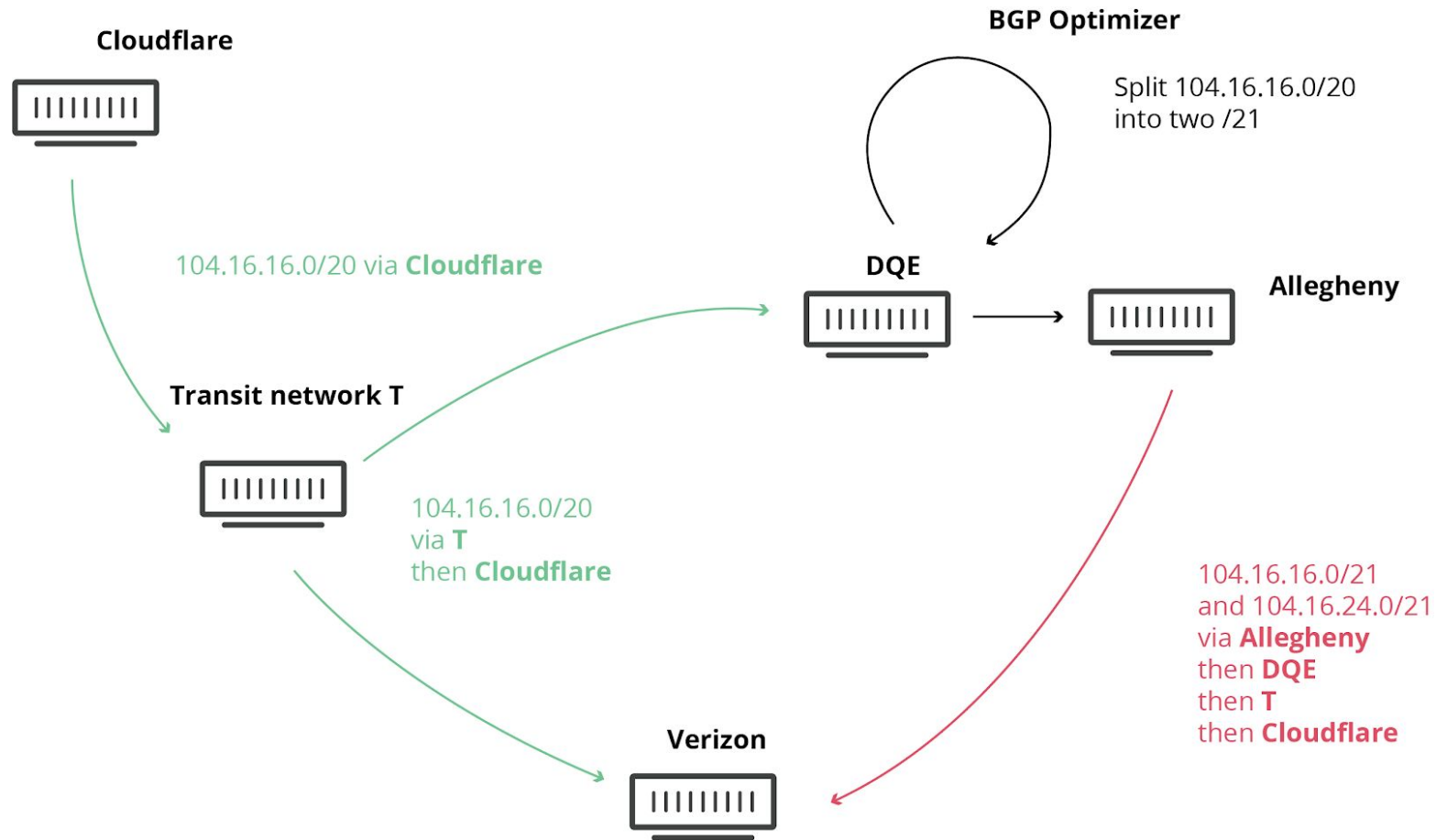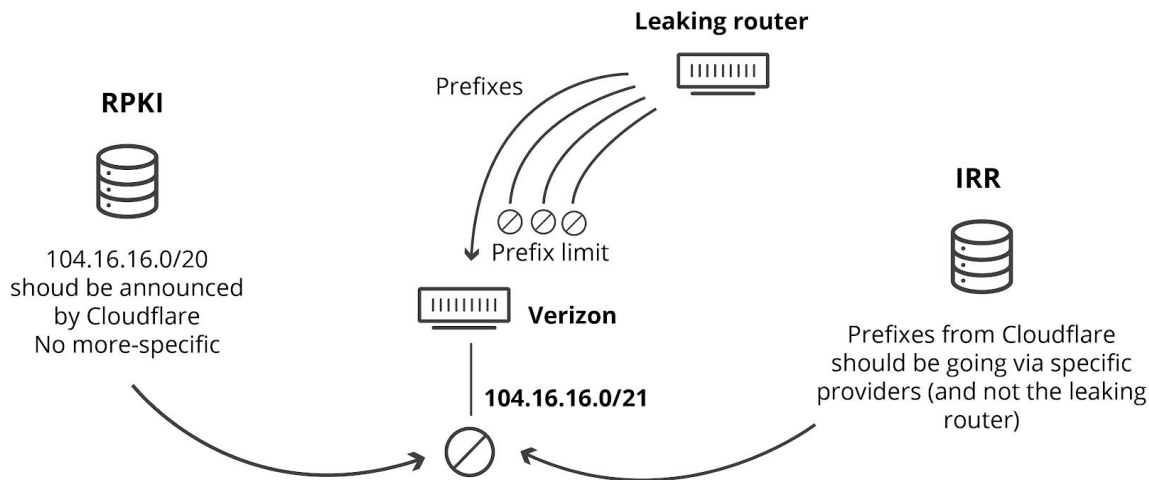
24 Jun 2019 by Tom Strickx.

Share   Like 4.5K   Tweet

Massive route leak impacts major parts of the Internet, including Cloudflare

What happened?

3

Cloudflare

BGP Optimizer

Split 104.16.16.0/20
into two /21

104.16.16.0/20 via **Cloudflare**

DQE

Allegheny

Transit network T

104.16.16.0/20
via **T**
then **Cloudflare**

104.16.16.0/21
and 104.16.24.0/21
via **Allegheny**
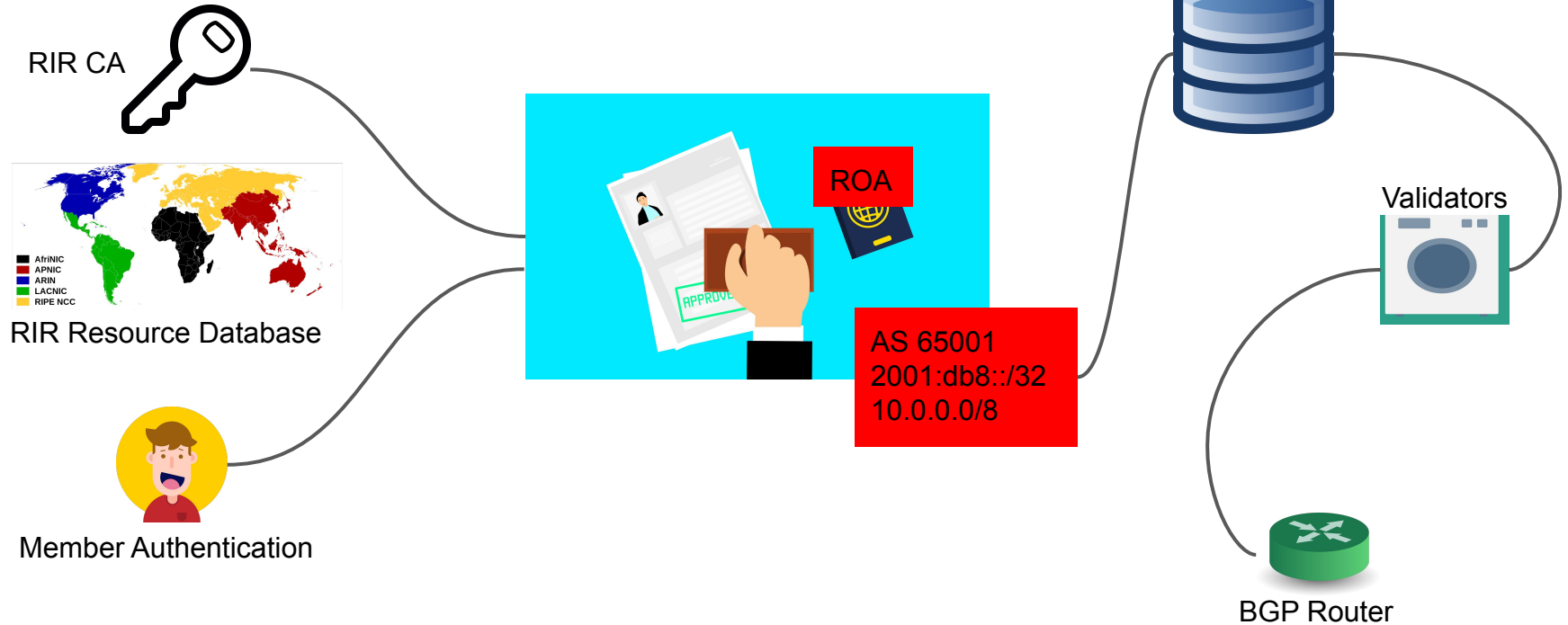then **DQE**
then **T**
then **Cloudflare**

Verizon

What Verizon did wrong?

- They did not use prefix limits
- No IRR-based filtering
- No RPKI-based filtering i.e. Origin Validation
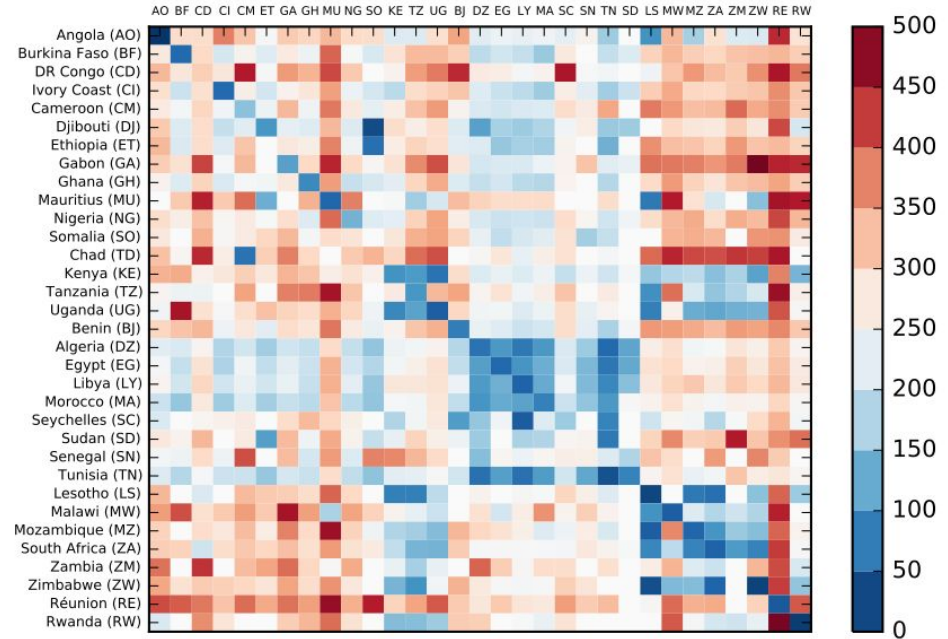
What is RPKI?

Public repositories

RIR CA

RIR Resource Database

Member Authentication

ROA

AS 65001
2001:db8::/32
10.0.0.0/8

Validators

BGP Router

Size doesn't matter, performance does!

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Internet traffic measurement - Why?

- What is the delay like?
- QoE/QoS by end-users
- Which route?
- DNS Resolution time
- Throughput

v1 v2 v3 v4

Anchor

RTT Measurements

Probe	ASN (IPv4)	ASN (IPv6)			Time (UTC)	RTT		Hops	Success	
446	37708	37708	🇲🇺	☁	2019-07-11 08:05	2.478		2	✔	ℹ
6059	37708	37708	🇲🇺	☁	2019-07-11 08:05	0.499		2	✔	ℹ
19414	23889		🇲🇺	☁	2019-07-11 08:05	116.871		13	✔	ℹ
30057	36868		🇲🇺	☁	2019-07-11 08:05	11.206		8	✔	ℹ
50085	23889		🇲🇺	☁	2019-07-11 08:05	114.223		11	✔	ℹ

Questions?

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