



Bridging the IPv6 gap

Martin J. Levy

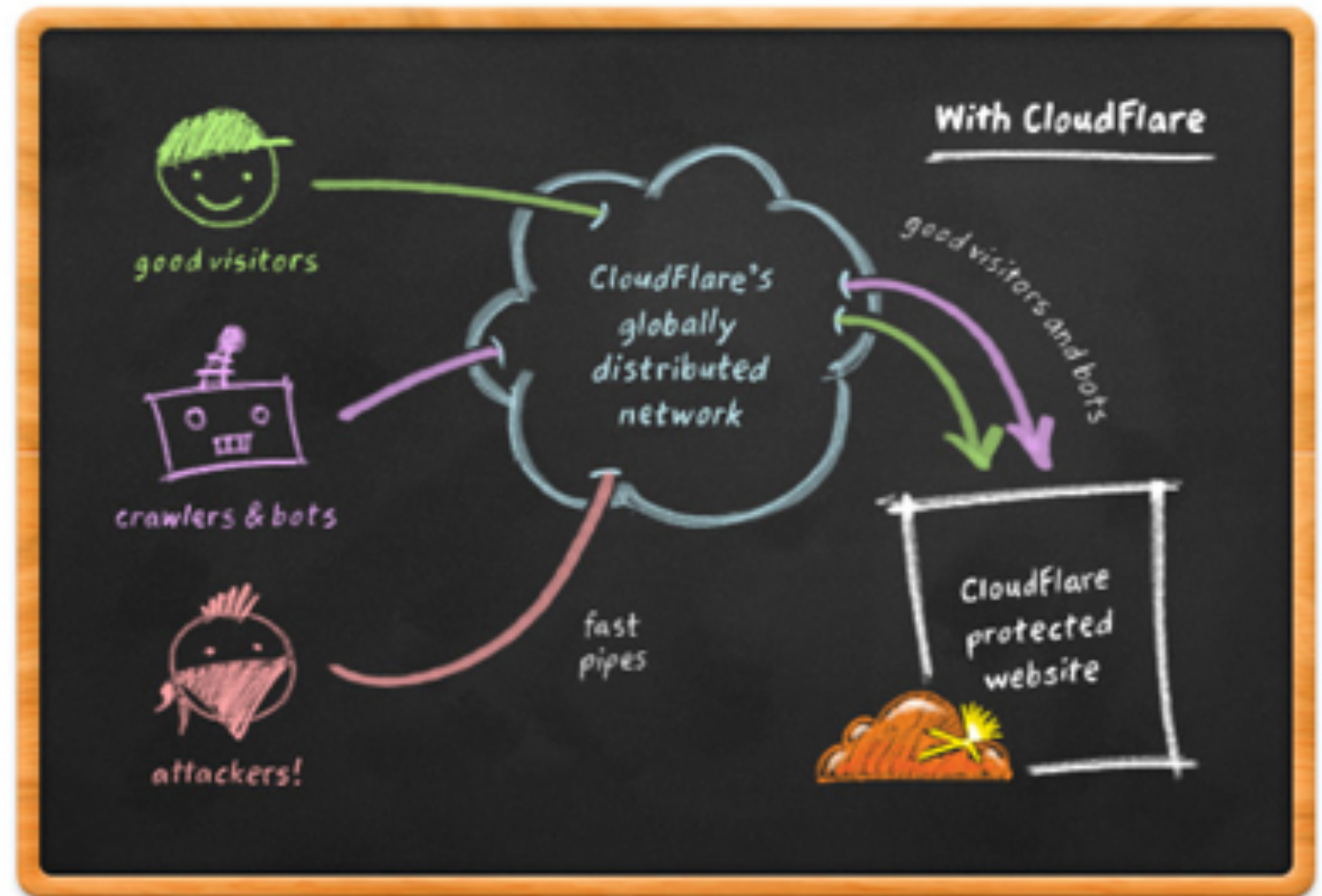
The role of intermediaries in enabling IPv6 – AIS 2014 Djibouti

Agenda

- Who is CloudFlare?
- The proof that IPv6 is real
- The missing parts (and the numbers behind that)
- Why CDNs can help
- Summary

Who is CloudFlare?

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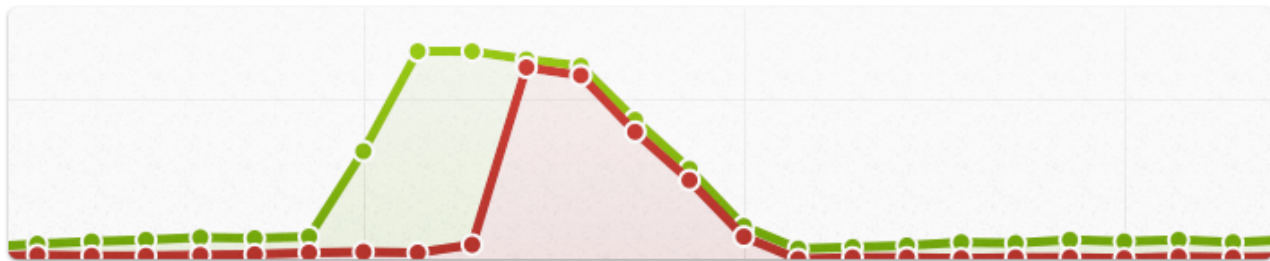


CloudFlare's mission is to build a better Internet

Who is CloudFlare?

CloudFlare security

CloudFlare leverages the knowledge of a diverse community of websites to power a new type of security service. Online threats range from nuisances like comment spam and excessive bot crawling to malicious attacks like SQL injection and denial of service (DOS) attacks. CloudFlare provides security protection against all of these types of threats and more to keep your website safe.



Automatic learning of new attacks

CloudFlare's technology automatically detects new attacks that arise against any website on its network. Once CloudFlare identifies that there is a new attack, CloudFlare starts to block the attack for both the particular website and the entire community. This also means the longer you are on CloudFlare, the better the protection becomes.

Web content optimization

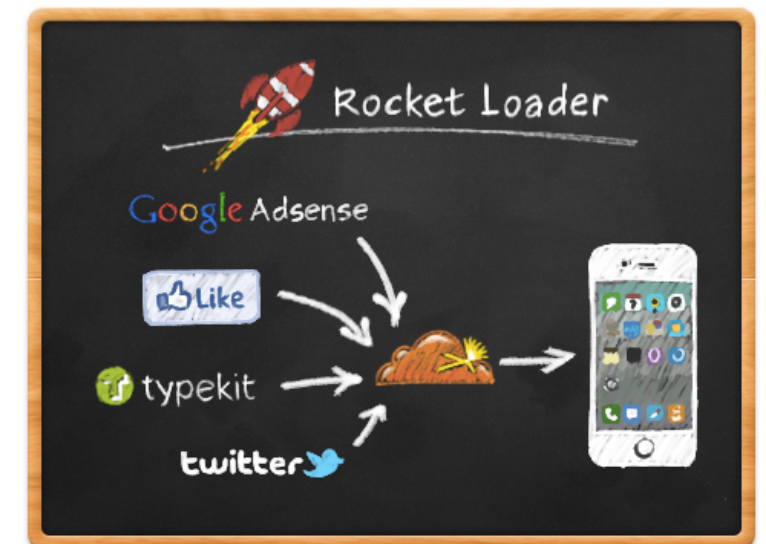
Web performance is not just about moving static files closer to visitors, it is also about ensuring that every page renders as fast and efficiently as possible from whatever device a visitor is surfing from. CloudFlare users can choose any combination of these web content optimization features that take performance to the next level.

Rocket Loader

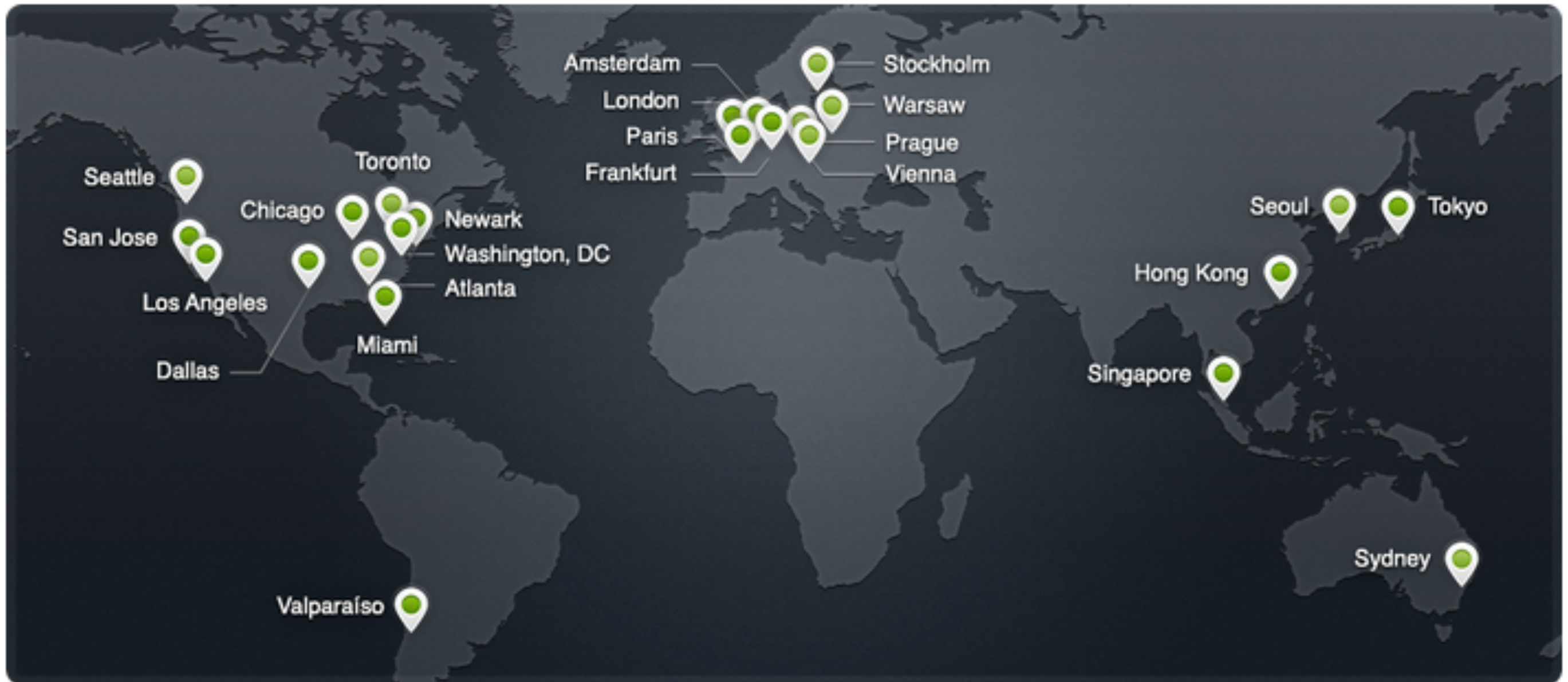
Automatically optimizes your pages to minimize the number of network connections and ensure even third party resources won't slow down page rendering.

Reduced connections

Combines multiple JavaScript files into a single request to avoid the overhead of multiple network requests.



Who is CloudFlare?



IPv6. This is what the problem looks like ...

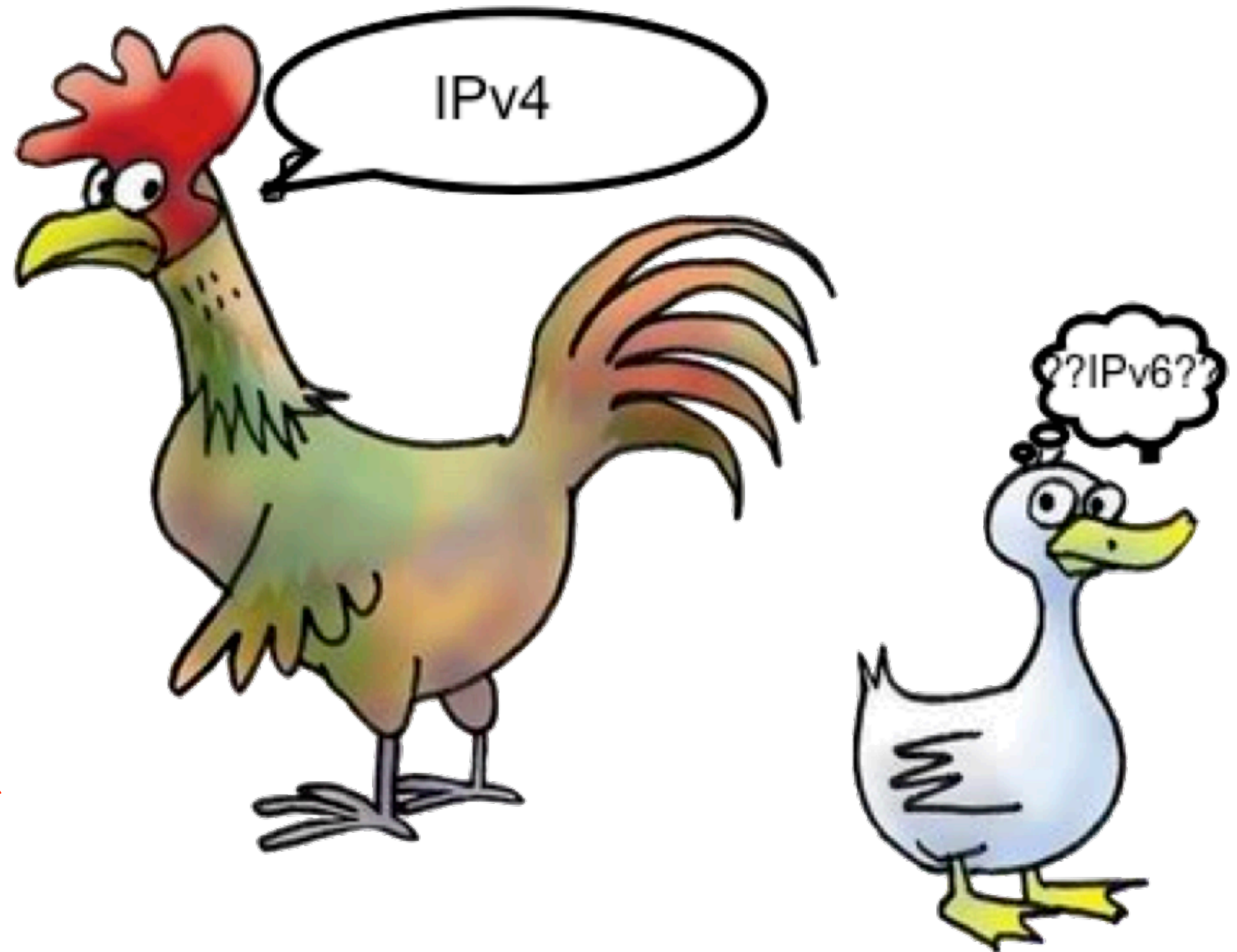
The Problem

Chicken talks Duck

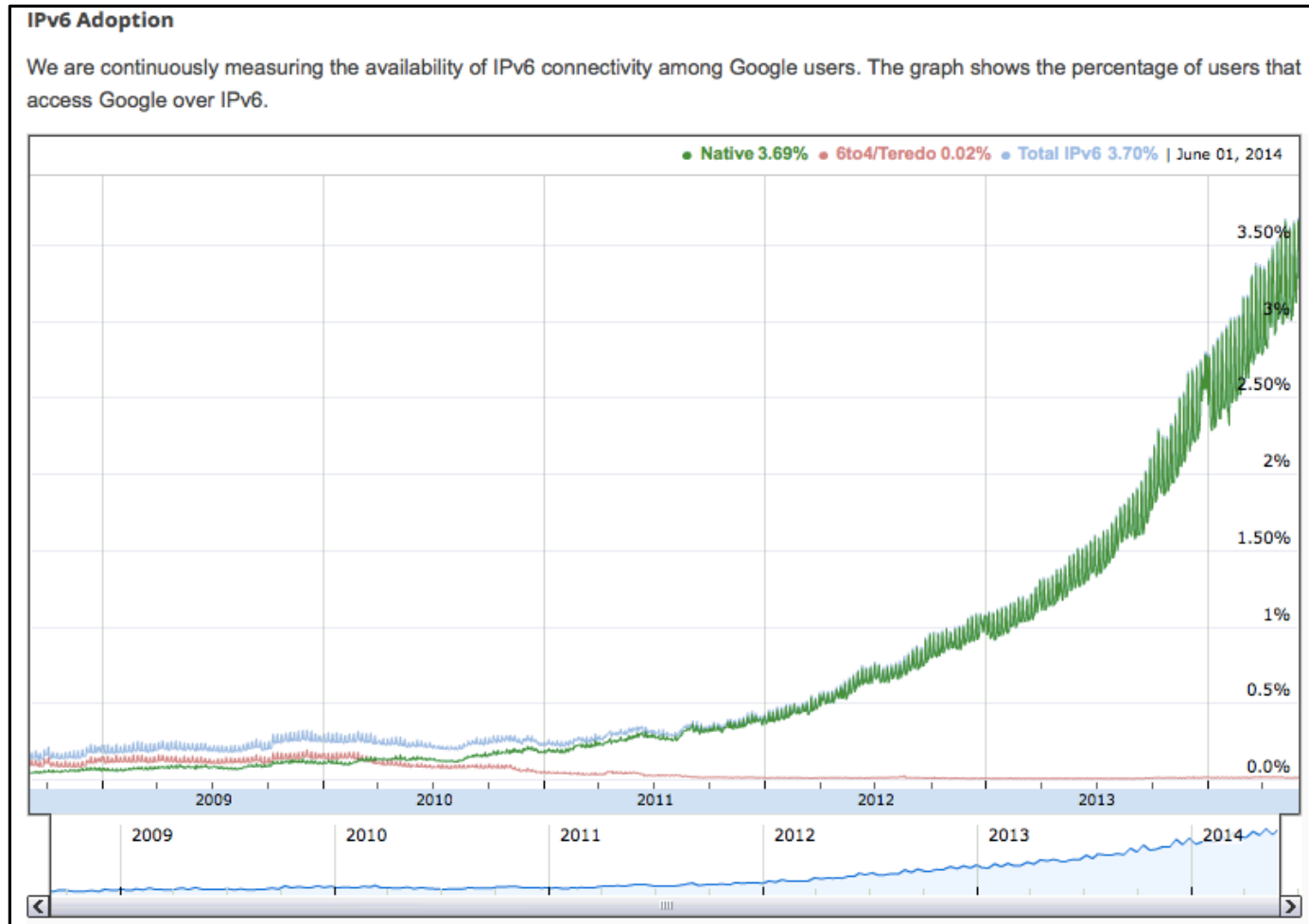
- or maybe -

IPv4 talks IPv6?

NO!



Measurements vs. Available IPv6



<http://www.google.com/intl/en/ipv6/statistics.html>

Network operator measurements, 20th May 2014 ([notes](#))

Show entries Search:

Participating Network	ASN(s)	IPv6 deployment
Comcast	7015, 7016, 7725, 7922, 11025, 13367, 13385, 20214, 21508, 22258, 33287, 33489, 33490, 33491, 33650, 33651, 33652, 33653, 33654, 33655, 33656, 33657, 33659, 33660, 33661, 33662, 33664, 33665, 33666, 33667, 33668, 36733	27.79%
ATT	6389, 7018, 7132	19.15%
KDDI	2516	11.67%
Verizon Wireless	6167, 22394	50.58%
Time Warner Cable	7843, 10796, 11351, 11426, 11427, 12271, 20001	9.05%
Deutsche Telekom AG	3320	21.98%
Free	12322	37.86%
Telenet	6848	31.25%
Liberty Global	5089, 6830, 20825, 29562	3.35%
RCS & RDS	8708	24.38%

Showing 1 to 10 of 207 entries

First Previous 1 2 3 4 5 Next Last

<http://www.worldipv6launch.org/measurements/>

IPv6 can be done!

So what's missing?

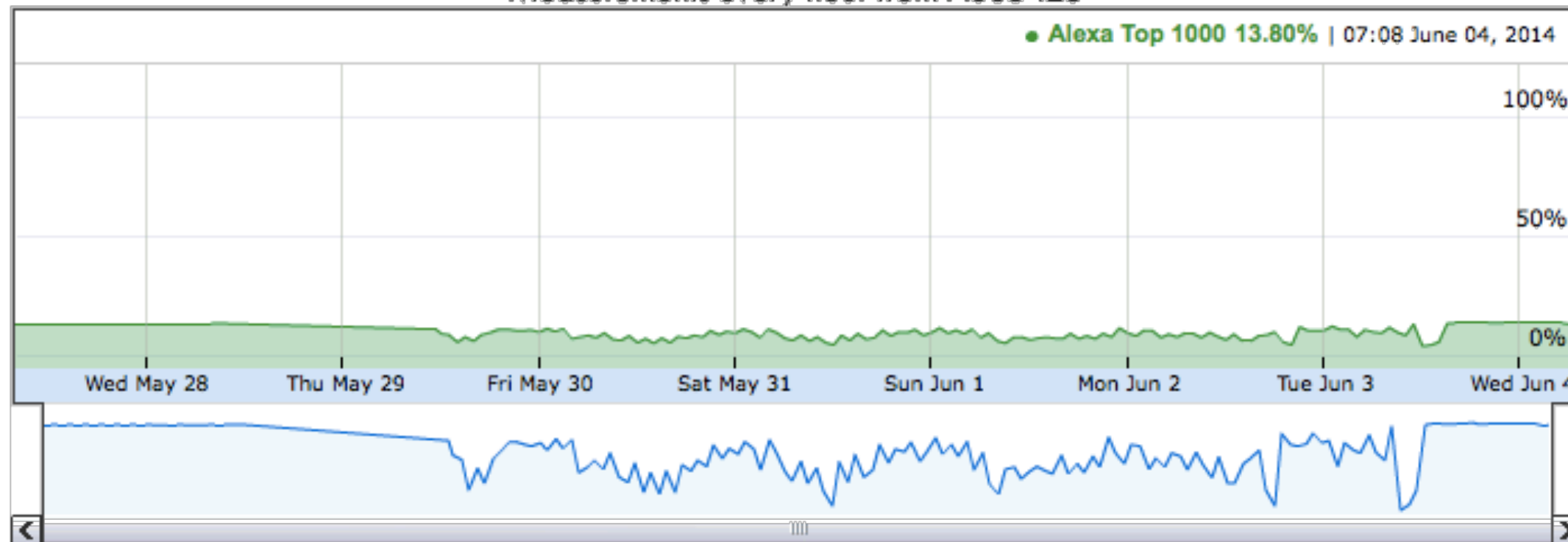
Sure, some networks need to catch up

But where's the content?

The Alexa top 1,000 – the 13% number

Percentage of Alexa Top 1000 websites currently reachable over IPv6

Measurements every hour from AS35425



<http://www.worldipv6launch.org/measurements/>

What about all everyone else?

How can we fix this?

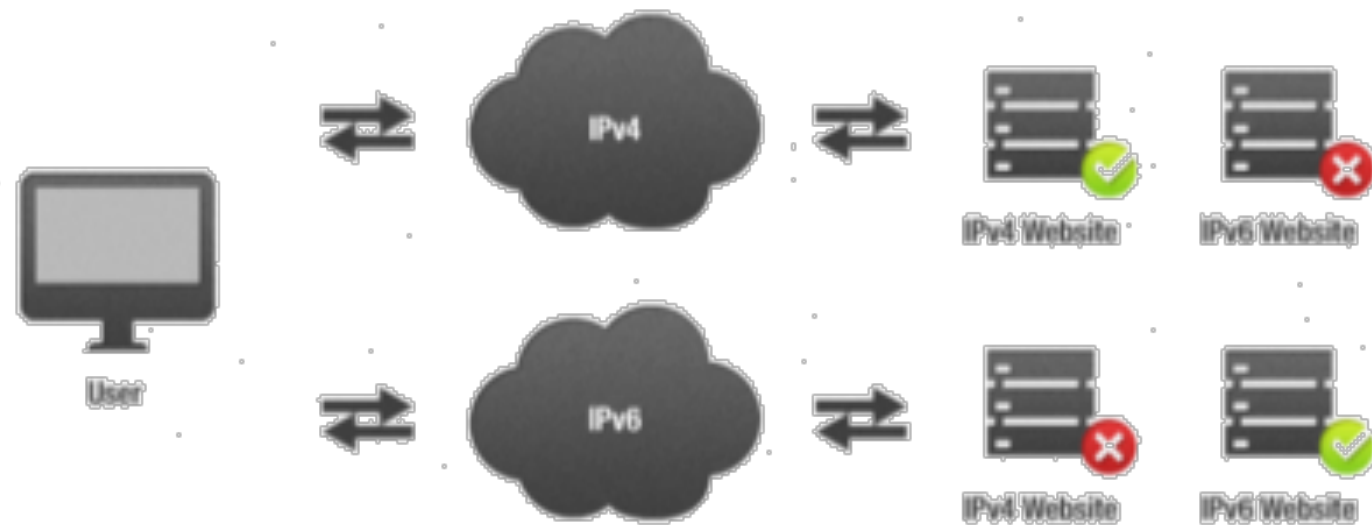
That sounds expensive

But, you really need to plan
for ~~the future~~ **right now**.

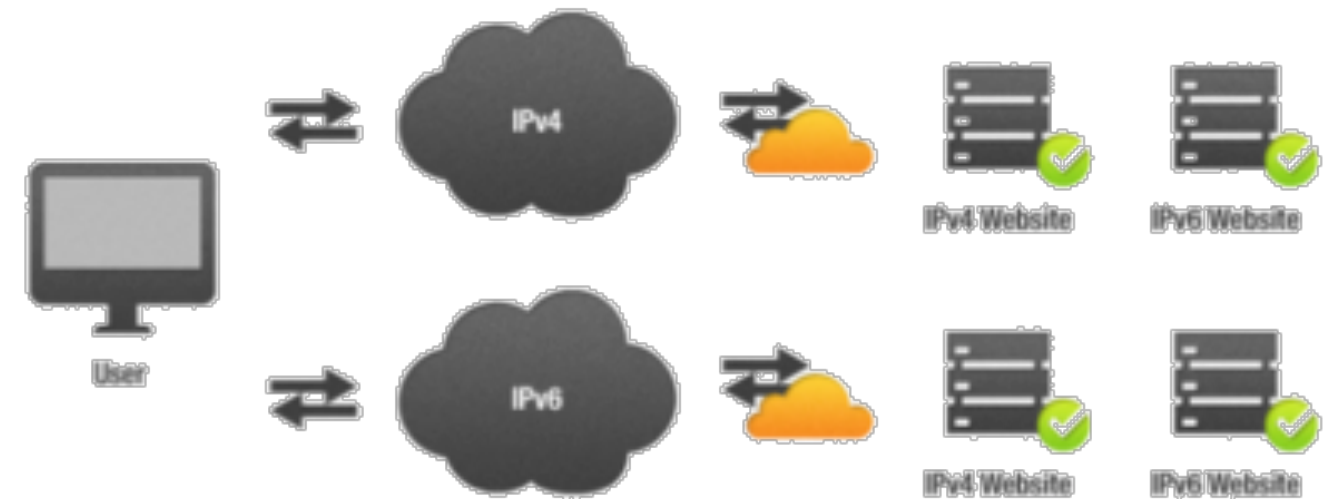
There is an “Easy Way Out”

Please, tell me more!

Use a CDN to enable IPv6 user facing services



Unfortunately, IPv4 and IPv6 are incompatible.
They cannot communicate with each other.



The Automatic IPv6 Gateway, which
is ~~enabled~~ with the flip of a switch
enabled by default!

Use a CDN to enable IPv6 user facing services

Automatic IPv6

Enable IPv6 support. [Learn more...](#)

Off



Automatic IPv6

Enable IPv6 support. [Learn more...](#)

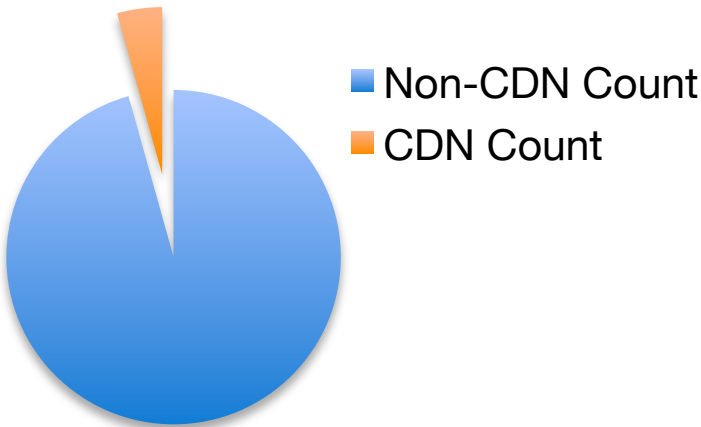
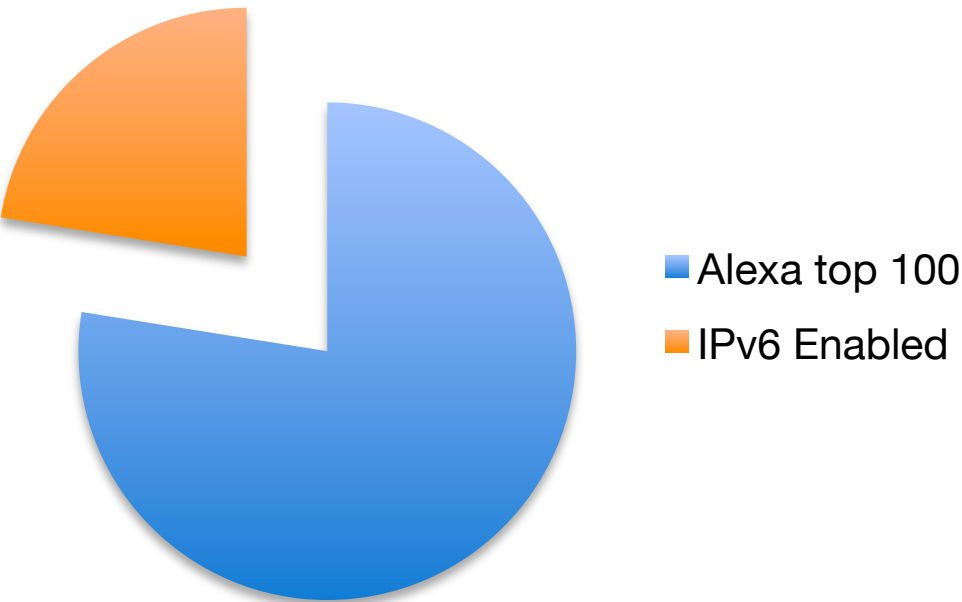
Full



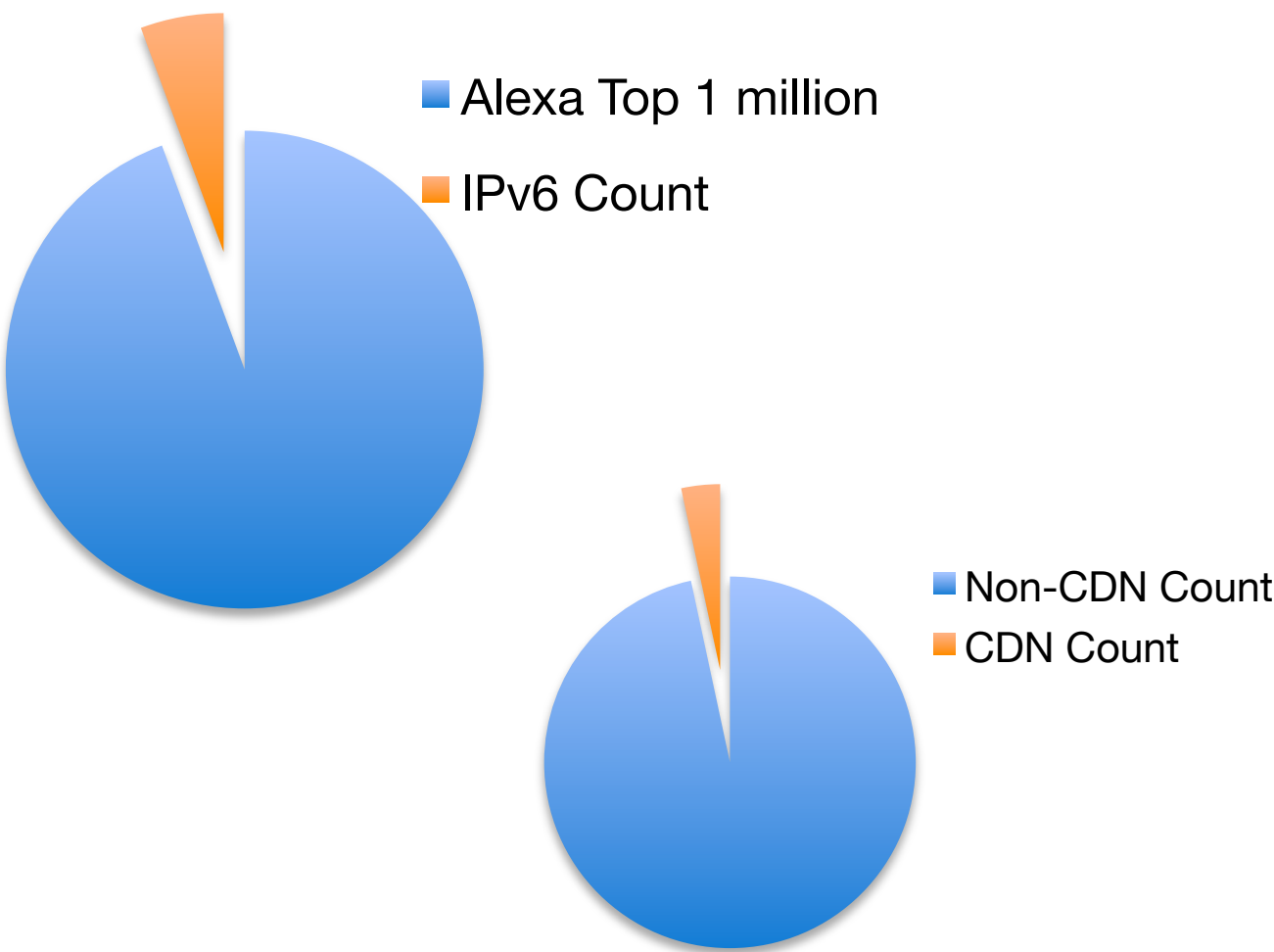
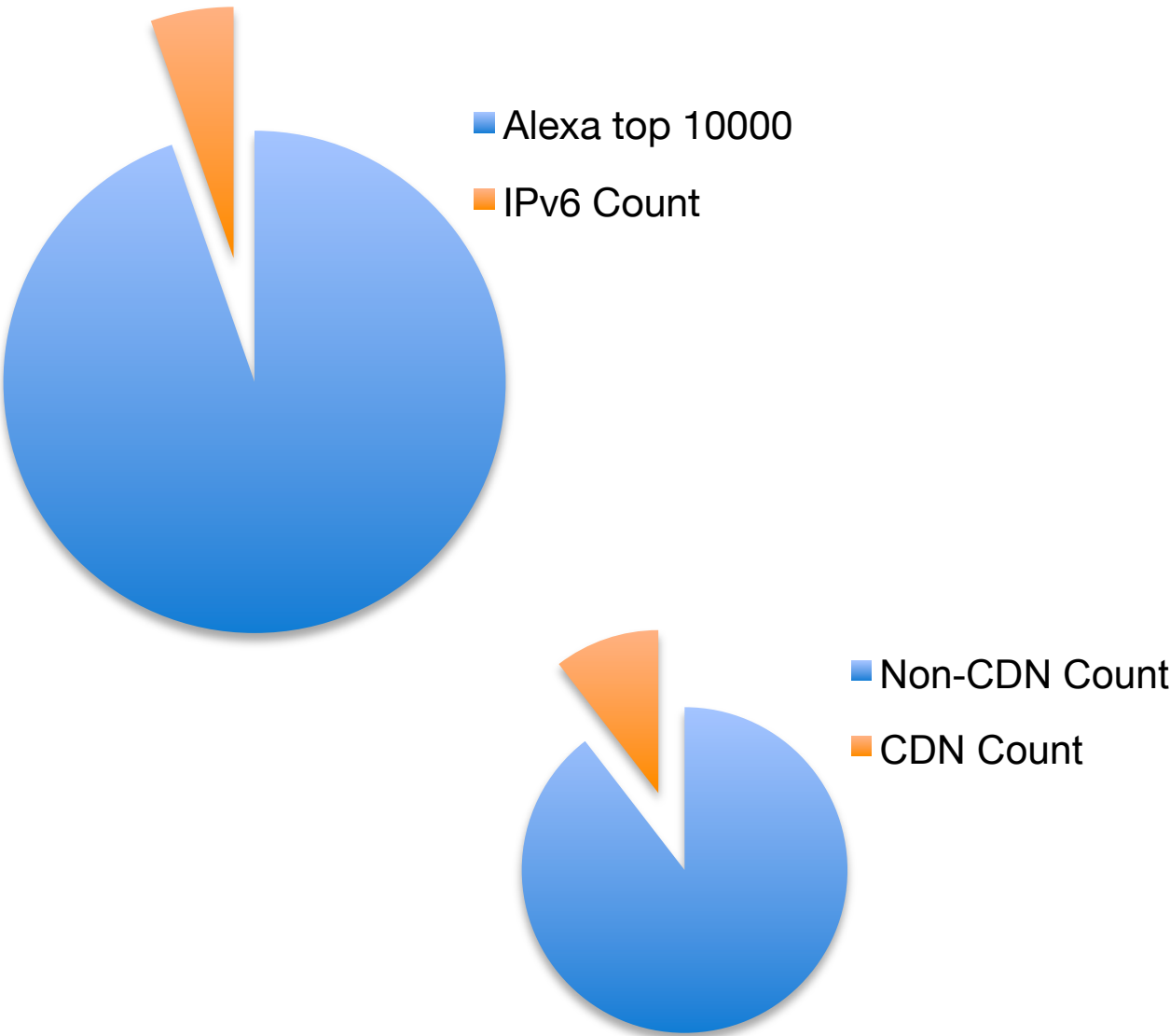
 Tweet

enabled by default!

Alexa 100 & 1,000 results and CDN usage



Alexa 10,000 & 1,000,000 results and CDN usage



Does this solve all your troubles?

- You still need to upgrade your platform to support IPv6 natively
- However, This can be a good stepping stone for you to getting IPv6 enabled

There is still a lot of work that needs to be done.

- Providers need to continue deployments
- IPv6 needs to be pushed to every subscriber, smartphone, etc.

But in the end...

...Everyone here needs to play their part

Don't make IPv6 for the future ...

... make IPv6 for right now!

Thank You!

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@cloudflare

