



# IPv6 Status – 6lab is your friend !

Steve Simlo – IPv6 PM

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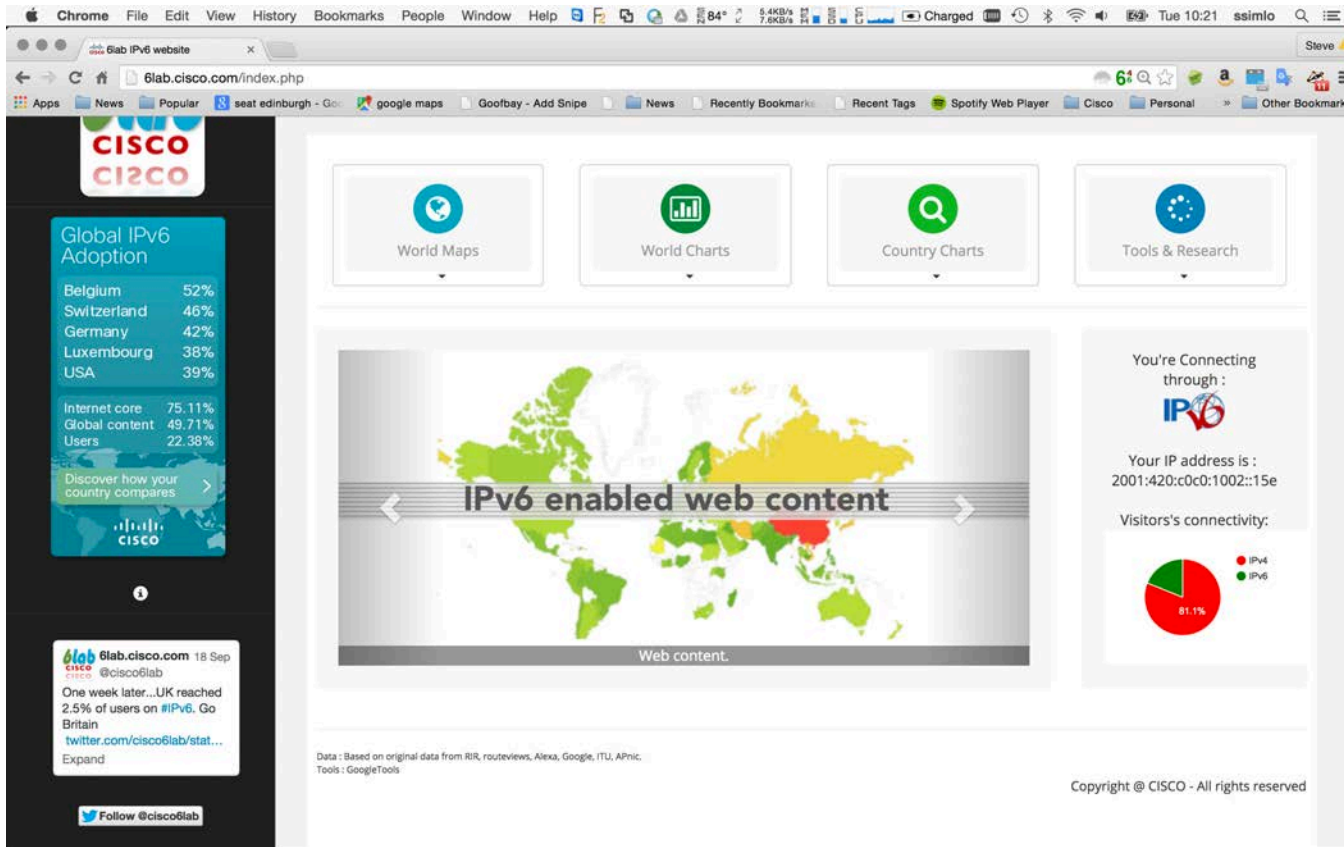


*“When a tree falls, we can hear it.  
When the forest grows, not a sound”*

*Gandhi*

# 6lab.cisco.com

# @cisco6lab



*Measuring on-going IPv6 adoption is the best way to foster deployment, monitor success and spot trouble areas, and in the end, make better (data driven) business decision.*



# IPv6 deployment phases – the key associated metrics

## 1 – Planning

*Prefixes (allocated, routed, traffic)*

*Sources: RIR db, routeview.org, BitTorrent agent*

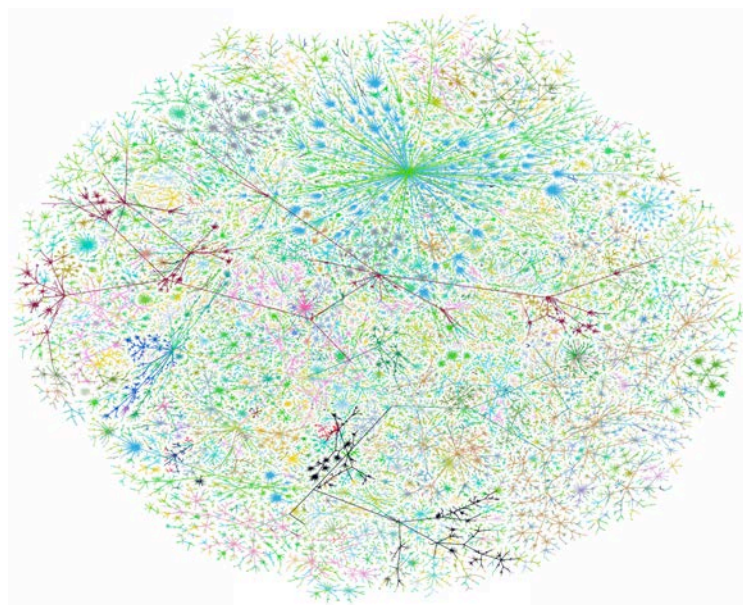


## 4 – User adoption

*Google users/browsers stats*

*APNIC Ad's embedded http probes*

*Sources: google stats, apnic lab*



## 2 – Network

*IPv6 Transit AS's*

*BGP tables*

*Source: routeview.org, RIPE Lab*



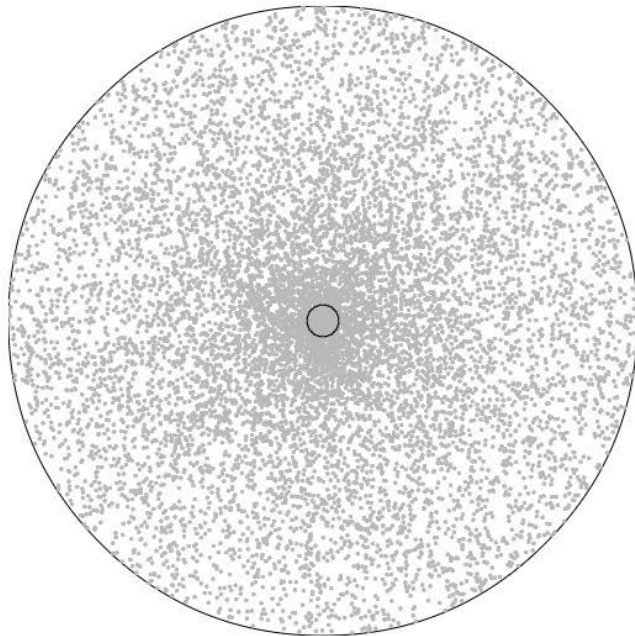
## 3 – Content

*Alexa top sites / country*

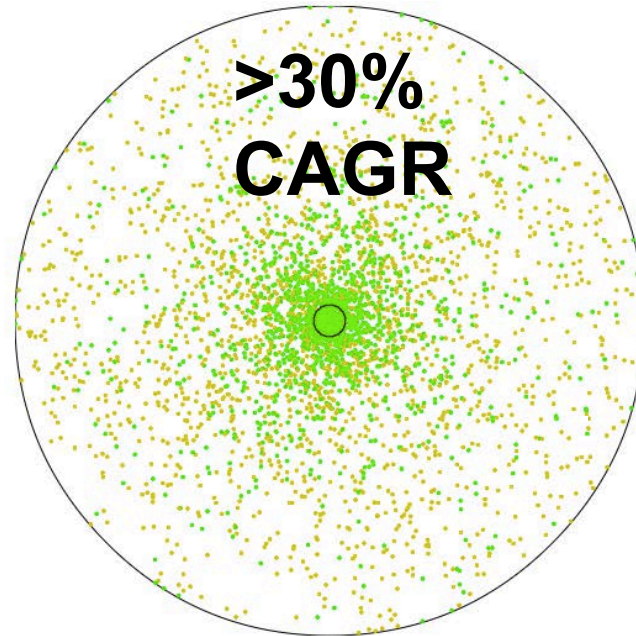
*+ 6lab http probes*

*Sources: Alexa.com, 6lab.cisco*

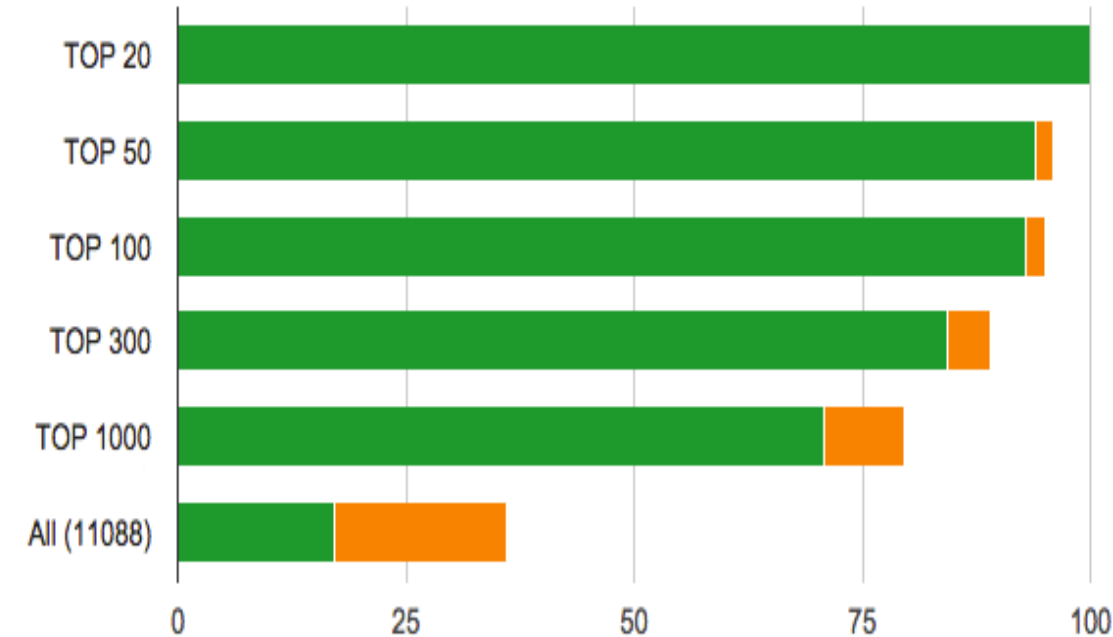
# The Internet Core is ready for IPv6 !



IPv4 transit AS's: 11088



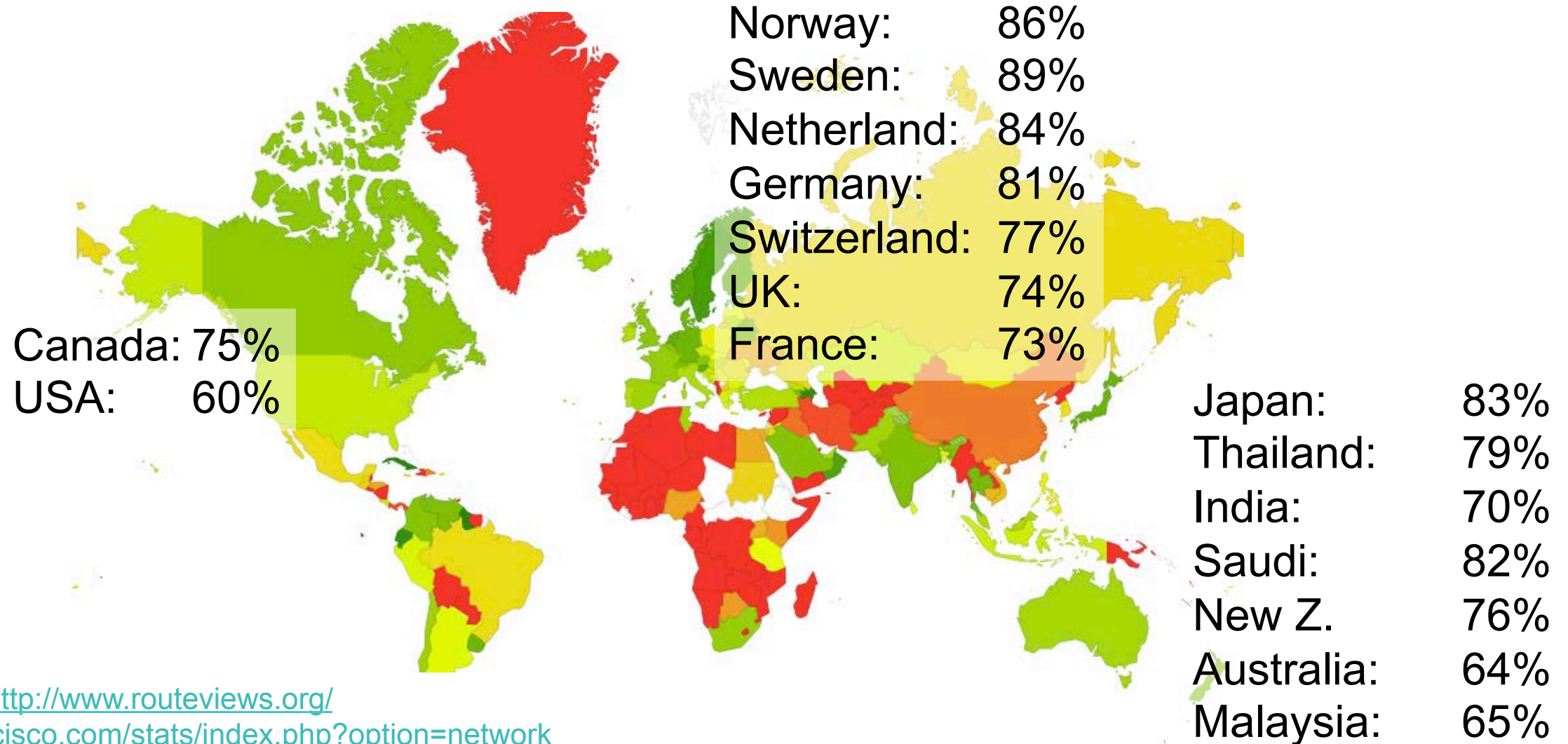
IPv6 transit AS's: 1906\*  
IPv6 enabled AS's: 3996



Concentrated in the Core  
93% of Top100 and  
85% of Top300 AS's are IPv6 transit

## Call for Action: Enable the long tail, the AS's at the periphery

# Per country IPv6 Transit readiness

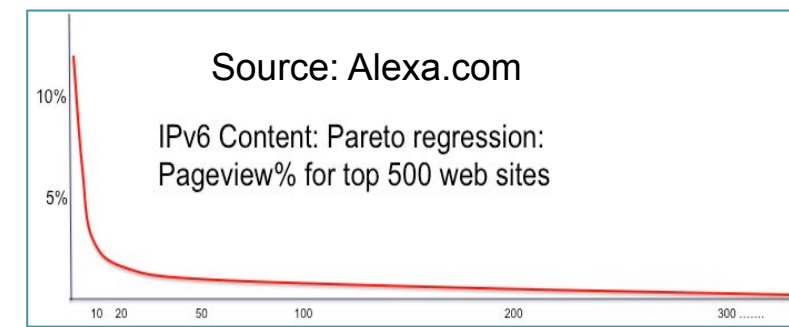


Sources: <http://www.routeviews.org/>  
<http://6lab.cisco.com/stats/index.php?option=network>



# Per country IPv6 enabled Content.

Sites among top500 - % of pageview over IPv6



Czech Rep.: 93 sites – 63.6%  
Norway: 88 sites – 52.8%

~ 50% of content is reachable over IPv6 ...

Mainly from Internet Giants (Google, Facebook, Yahoo, YouTube, Wikipedia,...)  
CDN and some Cloud providers

LOCAL Content is missing, primarily from Enterprises and public sector  
(e-commerce, e-banking, e-health...e-education, e-government)

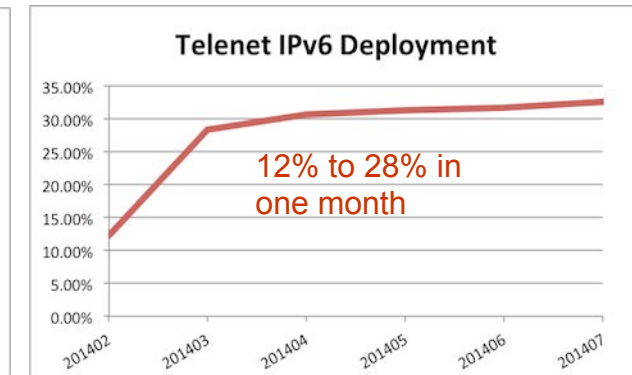
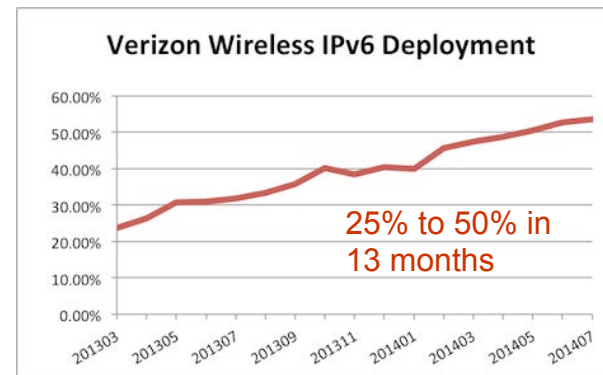
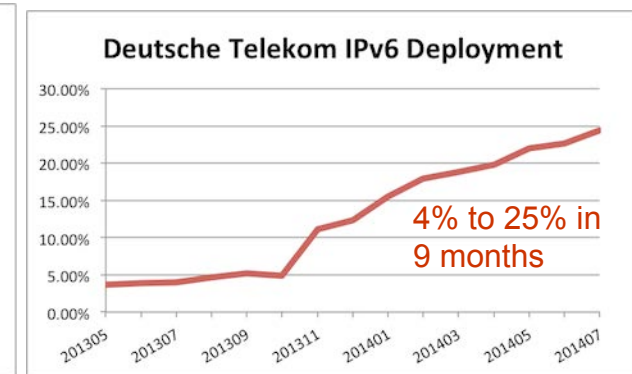
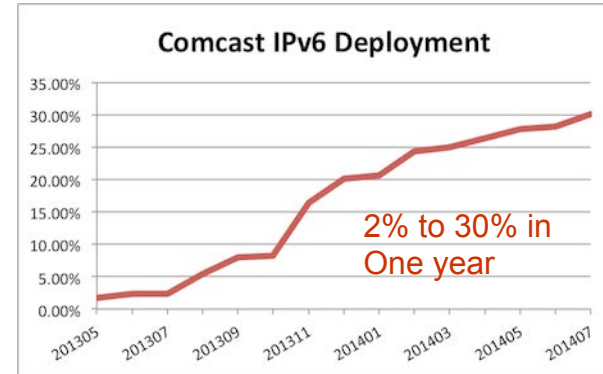
CloudFlare has impacted long tail (+1% overnight, emerging countries)

Sources: alexa.com top500/country+ 6lab.cisco.com probes  
<http://6lab.cisco.com/stats/index.php?option=content>

# Forget the past, IPv6 is rolling out FAST

## Network operator measurements, 12th August 2015

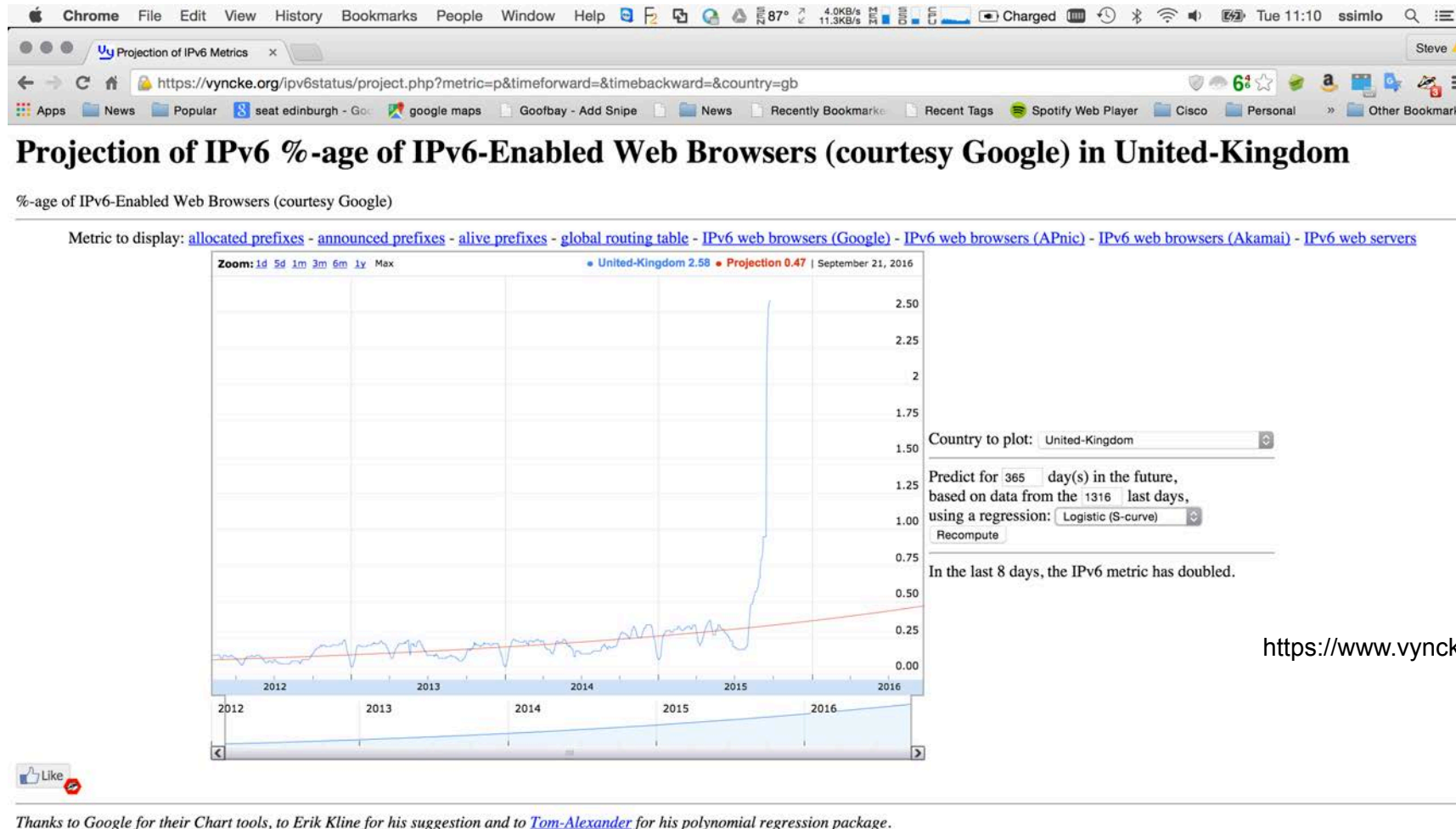
Show 10 entries Search: <input type="text"/>			
Rank	Participating Network	ASN(s)	IPv6 deployment
1	<a href="#">Comcast</a>	7015, 7016, 7725, 7922, 11025, 13367, 13385, 20214, 21508, 22258, 22909, 33287, 33489, 33490, 33491, 33650, 33651, 33652, 33653, 33654, 33655, 33656, 33657, 33659, 33660, 33661, 33662, 33664, 33665, 33666, 33667, 33668, 36732, 36733	33.57%
2	<a href="#">ATT</a>	6389, 7018, 7132	51.21%
3	<a href="#">KDDI</a>	2516	21.34%
4	<a href="#">Verizon Wireless</a>	6167, 22394	70.99%
5	<a href="#">Time Warner Cable</a>	7843, 10796, 11351, 11426, 11427, 12271, 20001	20.23%
6	<a href="#">T-Mobile USA</a>	21928	57.40%
7	<a href="#">Deutsche Telekom AG</a>	3320	30.32%
8	<a href="#">Telefonica del Peru</a>	6147	20.32%
9	<a href="#">SoftBank BB</a>	17676	3.67%
10	<a href="#">Telekom Malaysia</a>	4788	15.36%
Showing 1 to 10 of 288 entries			
First Previous 1 2 3 4 5 Next Last			



Combined % IPv6 usage as reported to ISOC by Akamai, Facebook, Google, Yahoo!, and LinkedIn



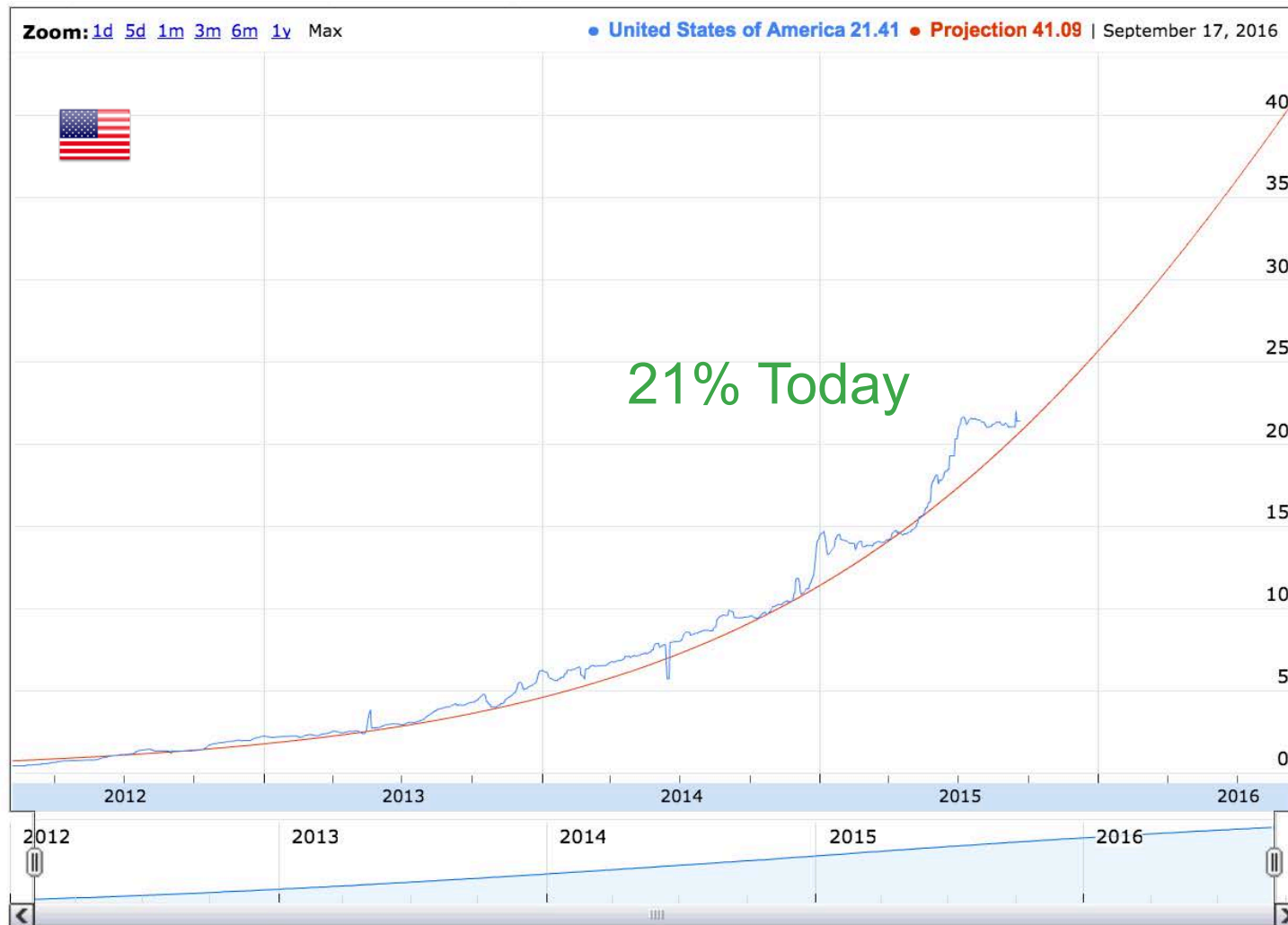
# % of IPv6 users as seen by Google in the UK



<https://www.vyncke.org/ipv6status/project.php>

Data: Google, Forecasting: Eric Vyncke, Cisco

# % of IPv6 users as seen by Google in the U.S.

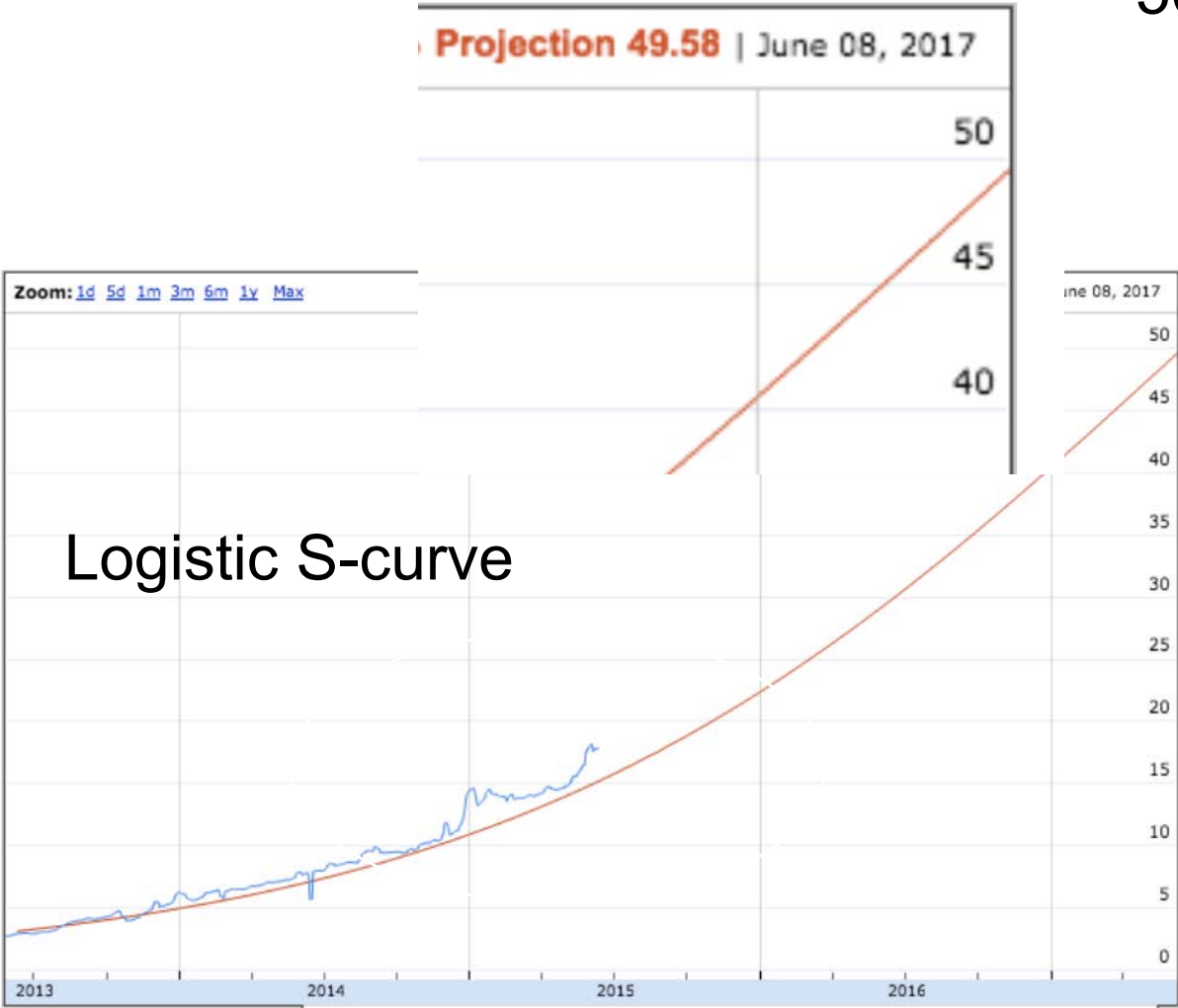


40+% in one year

Data: Google, Forecasting: Eric Vyncke, Cisco

# And in 2 years?

Somewhere between  
50% and 70%





# IPv6 for the Enterprise – brand new White Paper

The screenshot shows a web browser displaying the Cisco website. The page title is "IPv6 for the Enterprise in 2015". The left sidebar contains a navigation menu with links: HOME, PRODUCTS & SERVICES, CISCO IOS AND NX-OS SOFTWARE, CISCO IOS TECHNOLOGIES, ENTERPRISE IPV6 SOLUTION, DATA SHEETS AND LITERATURE, and WHITE PAPERS. The main content area features a quote: "Over 83 percent of the world's population no longer has access to the legacy variant of the commodity we have become familiar with as a 'public Internet address.' Put another way, in North America, Latin America, Asia, and Europe, the IPv4 address pool is already entirely depleted." Below the quote, there is a paragraph about IPv6 being the single answer to this issue, followed by a paragraph about the threat to enterprises with no IPv6 adoption plan, and another paragraph about the benefits of adopting IPv6. The right sidebar shows "Viewing Options" with a link to the PDF (871.2 KB) and a feedback link. The bottom of the page shows the start of the "Introduction" section, stating that the world has effectively run out of the legacy "lifeblood commodity" of the Internet: IP addresses.

Enterprise IPv6 Solution

## IPv6 for the Enterprise in 2015

[HOME](#)  
[PRODUCTS & SERVICES](#)  
[CISCO IOS AND NX-OS SOFTWARE](#)  
[CISCO IOS TECHNOLOGIES](#)  
[ENTERPRISE IPV6 SOLUTION](#)  
[DATA SHEETS AND LITERATURE](#)  
[WHITE PAPERS](#)  
[IPv6 for the Enterprise in 2015](#)

**Over 83 percent of the world's population no longer has access to the legacy variant of the commodity we have become familiar with as a "public Internet address." Put another way, in North America, Latin America, Asia, and Europe, the IPv4 address pool is already entirely depleted.**

IPv6 is the single answer to this issue, and it needs to be adopted globally across all parts of the Internet ecosystem. Global service providers and mobile operators are already adopting IPv6 in order to keep the Internet growing. IPv6 is allowing them to continue to grow their businesses and deliver the services that all of today's e-commerce is based on.

The threat to an enterprise with no IPv6 adoption plan grows daily. Such risks include reduced accessibility and performance of their online presence for a rapidly increasing number of newly connected Internet users.

Any organization that has already adopted IPv6 is already avoiding such risks while simultaneously realizing additional benefits, including operational efficiencies, improved security practices, and less reliance on complex address translations with their associated application-specific translation algorithms. Additional benefits include increasing network readiness for applications leveraging IPv6 as well as the preservation of business agility.

In this paper we discuss the main technology considerations that any enterprise adopting IPv6 needs to consider.

**Introduction**

The world has effectively run out of the legacy "lifeblood commodity" of the Internet: IP addresses. IPv4 provided enough space for

**Viewing Options**  
[PDF \(871.2 KB\)](#)  
[Feedback](#)

[http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/enterprise-ipv6-solution/whitepaper\\_c11-586154.html](http://www.cisco.com/c/en/us/products/collateral/ios-nx-os-software/enterprise-ipv6-solution/whitepaper_c11-586154.html)



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