

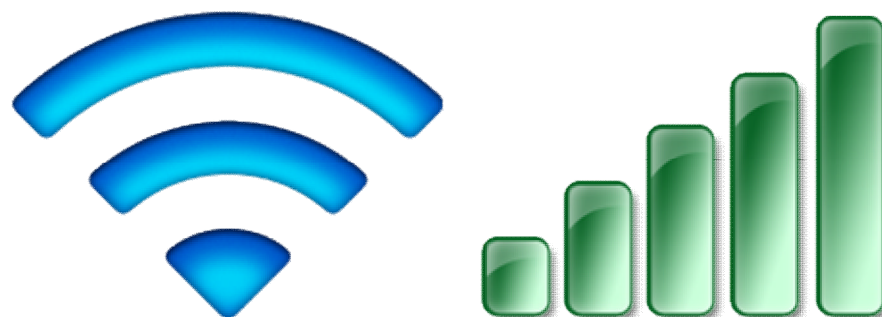


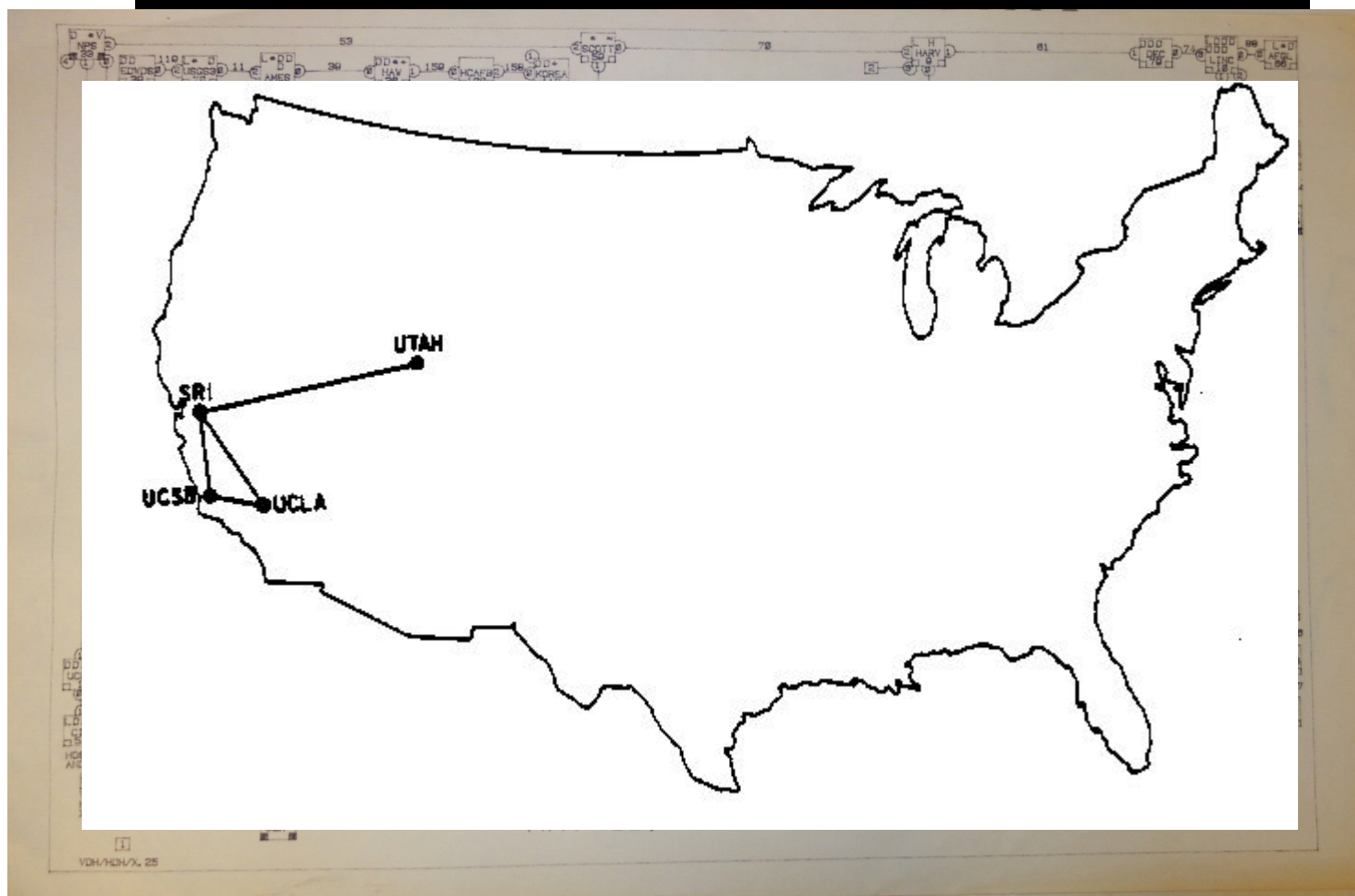
Visualizing the Internet: The Akamai Approach

David Belson

Sr. Director, Industry & Data Intelligence

dbelson@akamai.com // [@dbelson](https://twitter.com/dbelson)

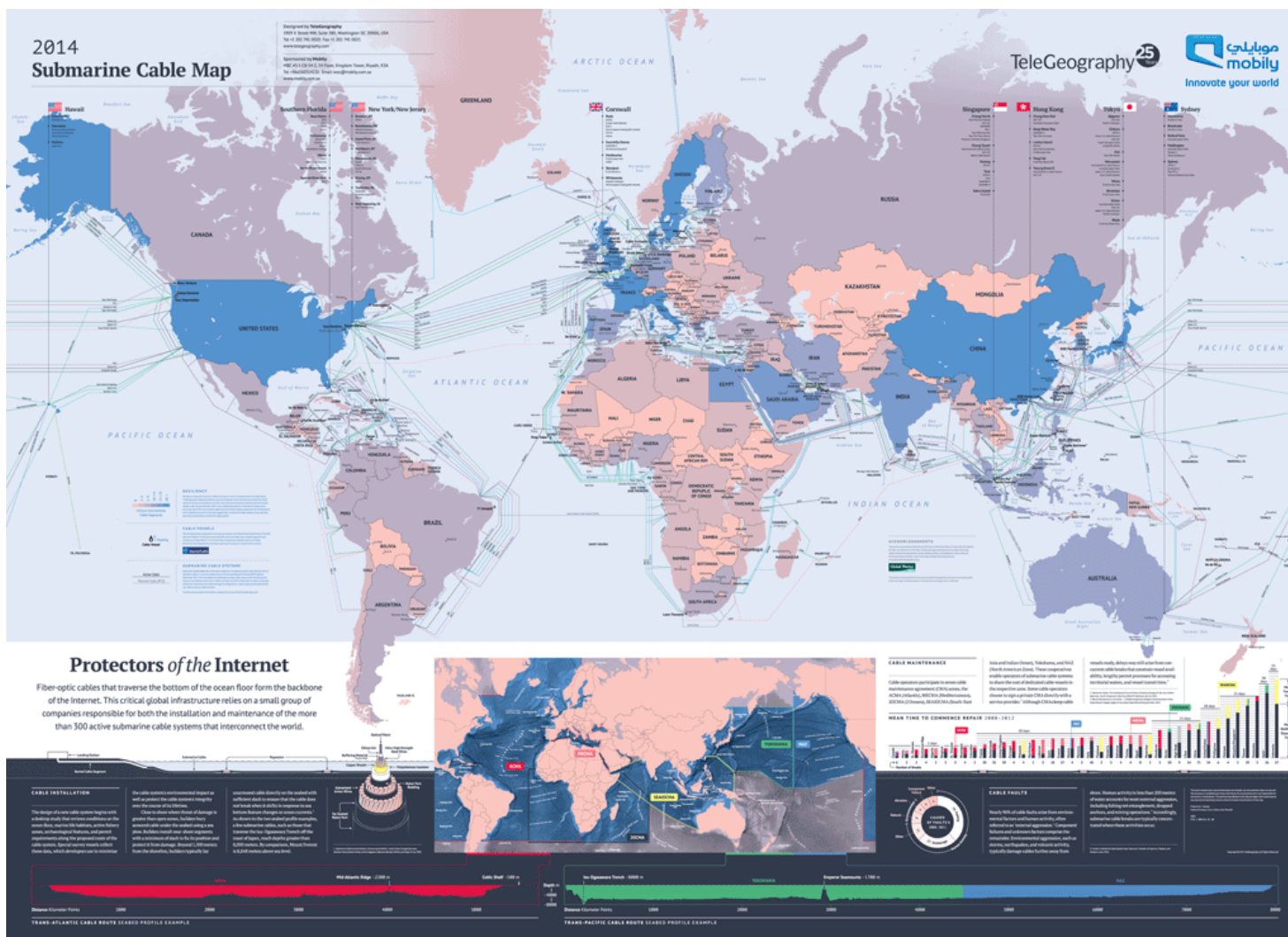




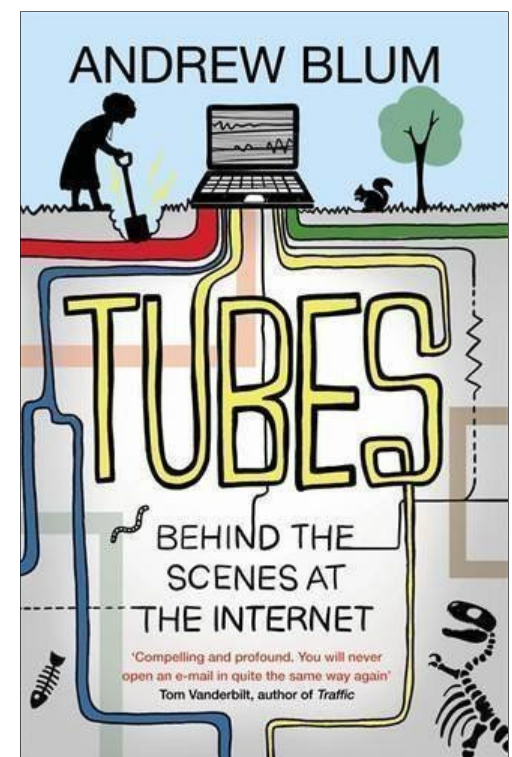
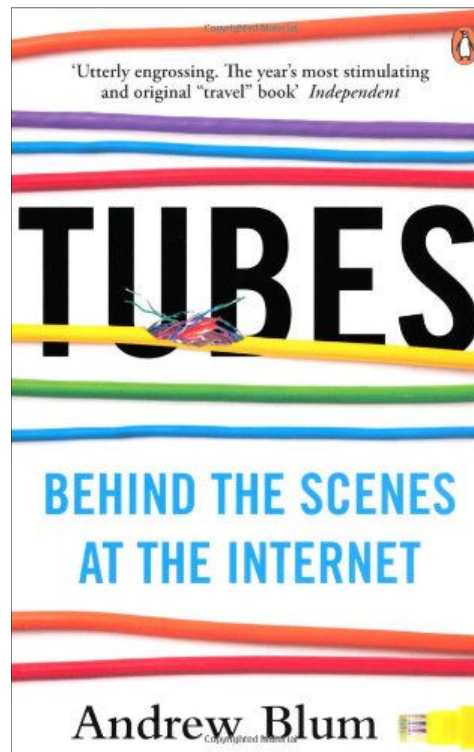
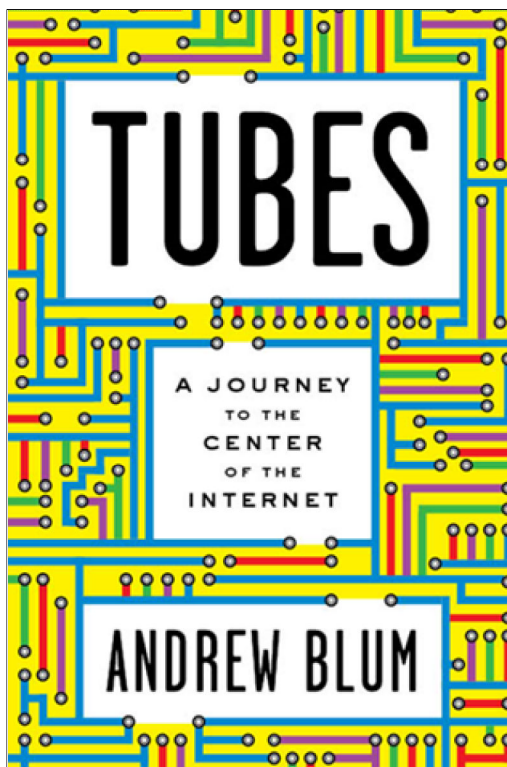
1969 -- <http://www.ralphehanson.com/wp-content/uploads/2012/06/press.jpg>

1984 -- http://commons.wikimedia.org/wiki/File:ARPANET_-_MILNET_as_of_May_30,_1984_-_BBN_map_-_DSC00126.JPG

1999 -- http://www.ibiblio.org/nmediac/winter2002/party_over2_files/fig6a.jpg



<http://shop.telegeography.com/products/submarine-cable-map>



<http://andrewblum.net/>



The leading cloud platform for enabling secure, high-performing user experiences on any device, anywhere.

ABOUT US:

- Distributed cloud platform, on-demand scale
- Delivering 15-30% of all daily Web traffic
- 2 trillion content requests daily
- 150M mobile apps delivered daily
- Defending against attacks over 200 Gbps
- Enabling >\$250 billion in annual e-commerce
- One network hop from 90% of Internet users

CORPORATE STATS:

Founded 1998	\$1.58B Revenue	5,000+ Customers	4,200+ Employees
-----------------	--------------------	---------------------	---------------------

PLATFORM STATS:

147K+ Servers	2,000+ Locations	1,200+ Networks	90+ Countries
------------------	---------------------	--------------------	------------------

The background of the slide features a composite image. At the top, a globe is shown with numerous green and blue lines radiating from it, representing global connectivity. Below the globe, a hand is visible, holding a computer mouse, suggesting user interaction. The title 'Akamai Solution Portfolio' is centered over the globe. Below the title is a row of six blue boxes, each containing a service category. At the bottom right, there is a block of descriptive text.

Akamai Solution Portfolio

**WEB
EXPERIENCE**

**WEB
SECURITY**

**MEDIA &
DELIVERY**

**HYBRID
WAN**

**NETWORK
OPERATOR**

**SERVICE &
SUPPORT**

A comprehensive set
of solutions built on the
Akamai Intelligent Platform™,
designed to meet the online
business needs of our customers.



Platform Inputs:

Measurements across various metrics related to Internet performance, architecture, and interconnectedness



Platform Usage:

Every request, whether good or bad in nature, carries associated information of interest

INTERNAL

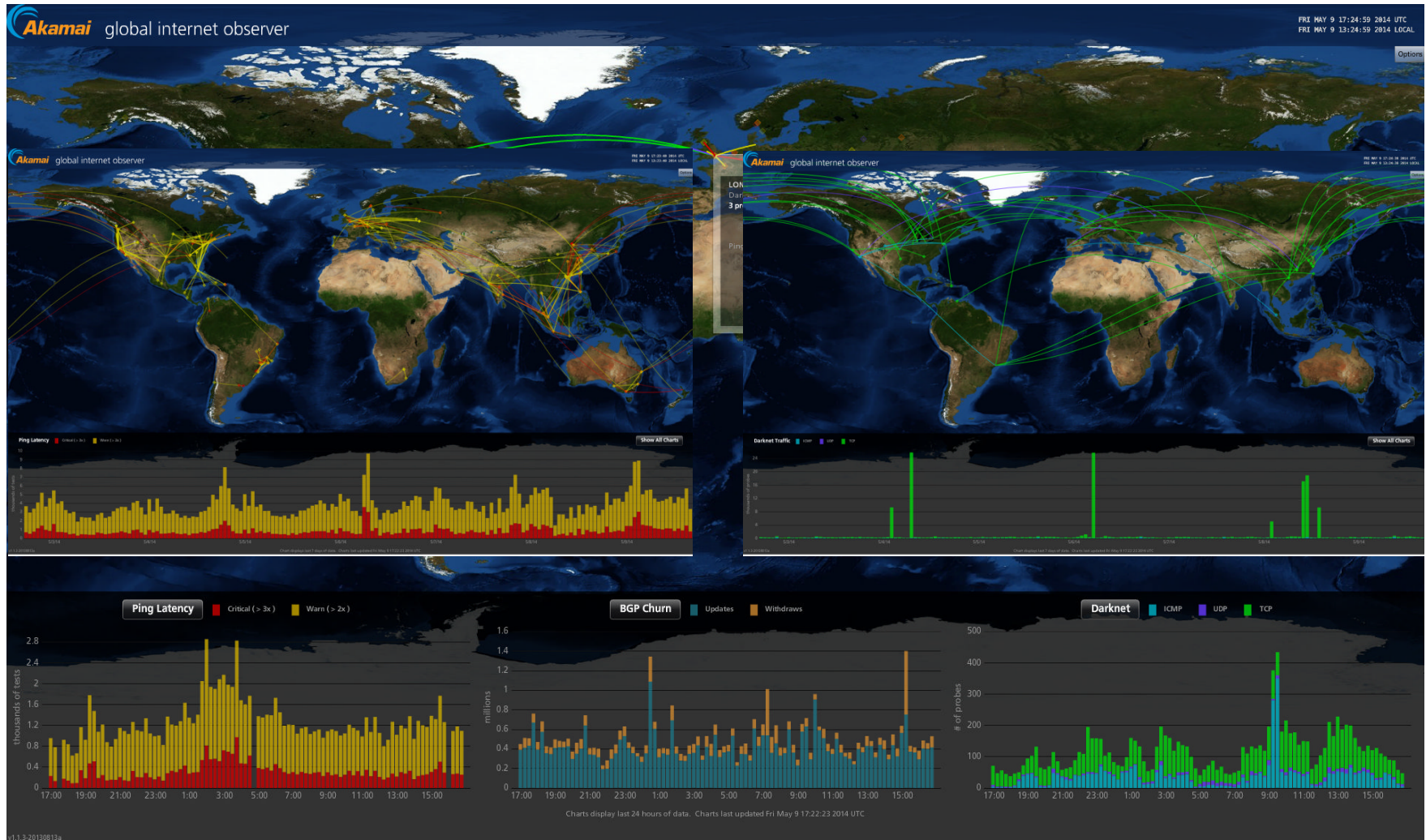
CUSTOMER VALUE CONFIRMATION

EXTERNAL

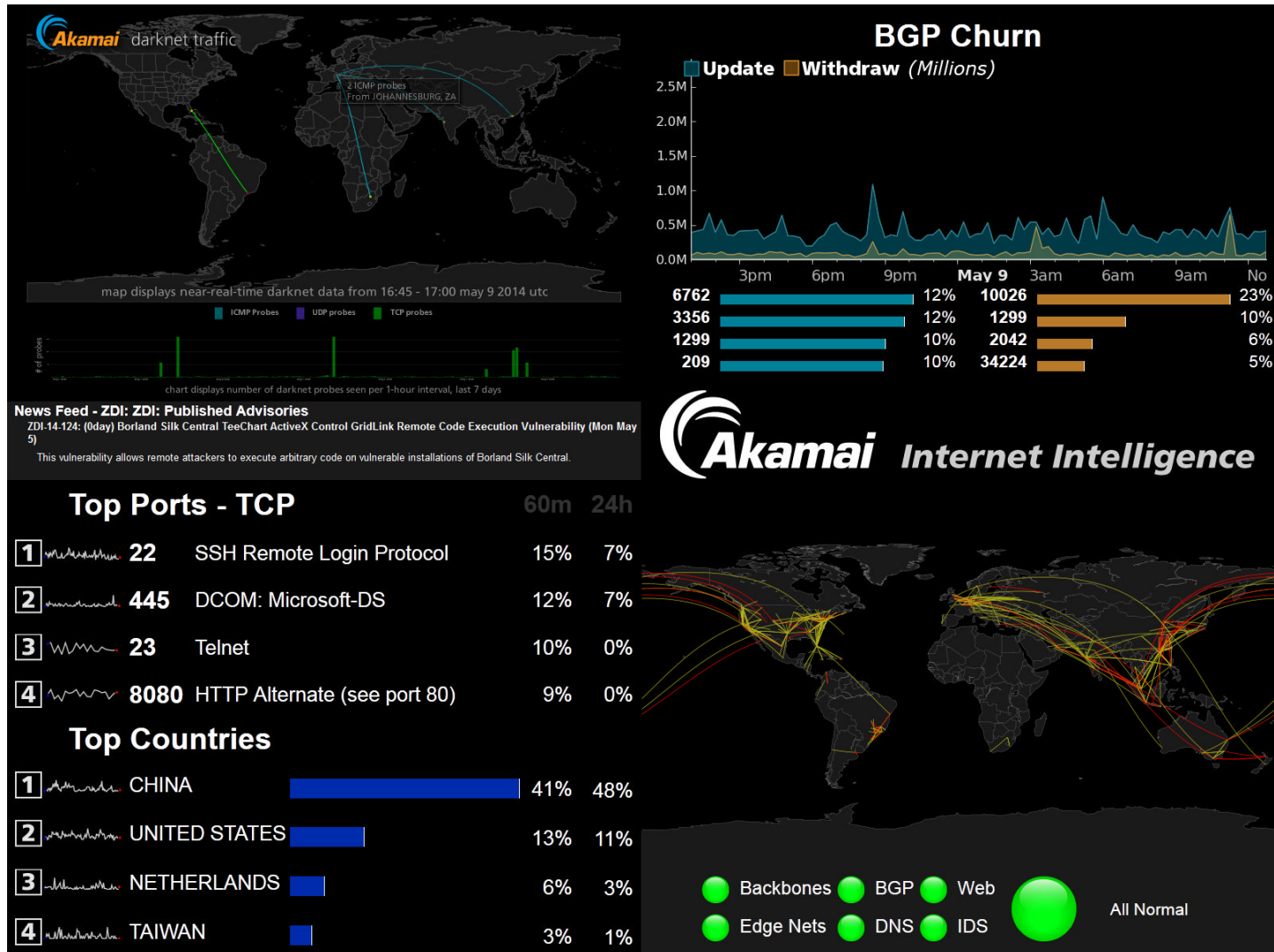
Akamai NOCC



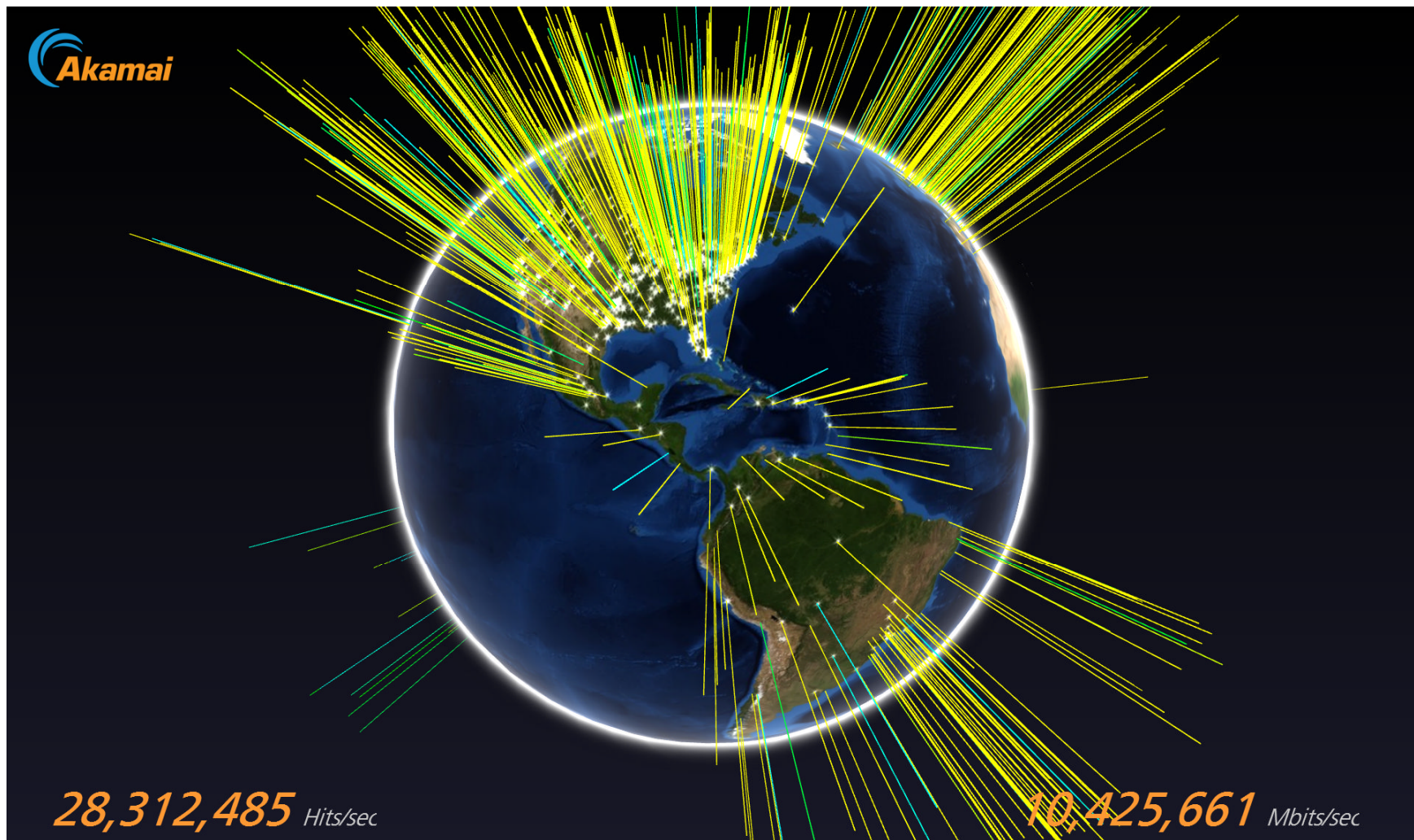
Global Internet Observer



Internet Intelligence



GNET a/k/a “The Spinning Globe”



Aggregate Traffic Patterns



Custom Analytics

2014-05-01



2014-05-10



[all categories]



FR

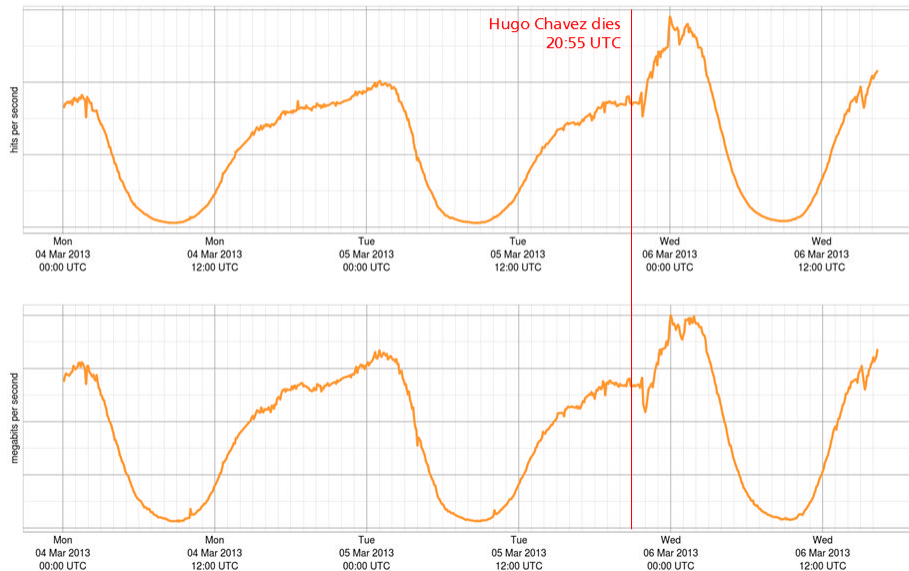


Make New Chart

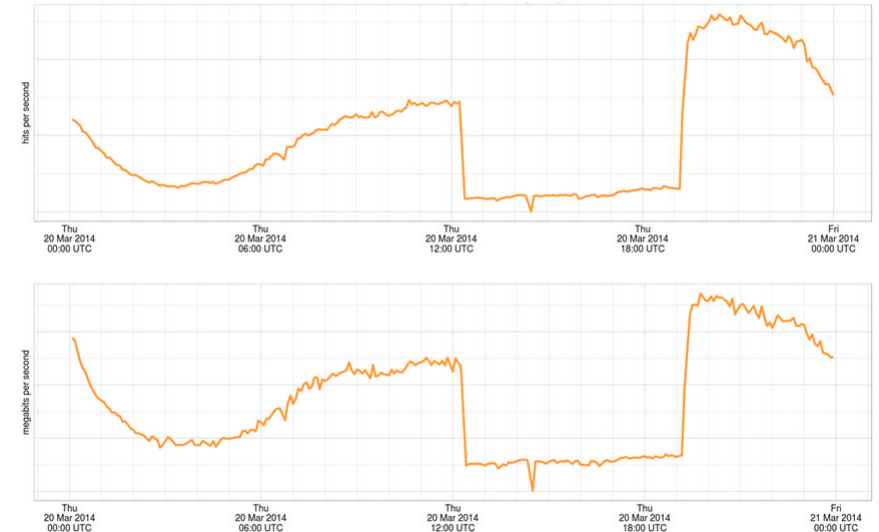
[all subcategories]



Akamai "Media & Entertainment" Traffic to Venezuela
Traffic spike observed on March 5, 2013



Akamai Traffic to Syria: March 20, 2014



@akamai_soti

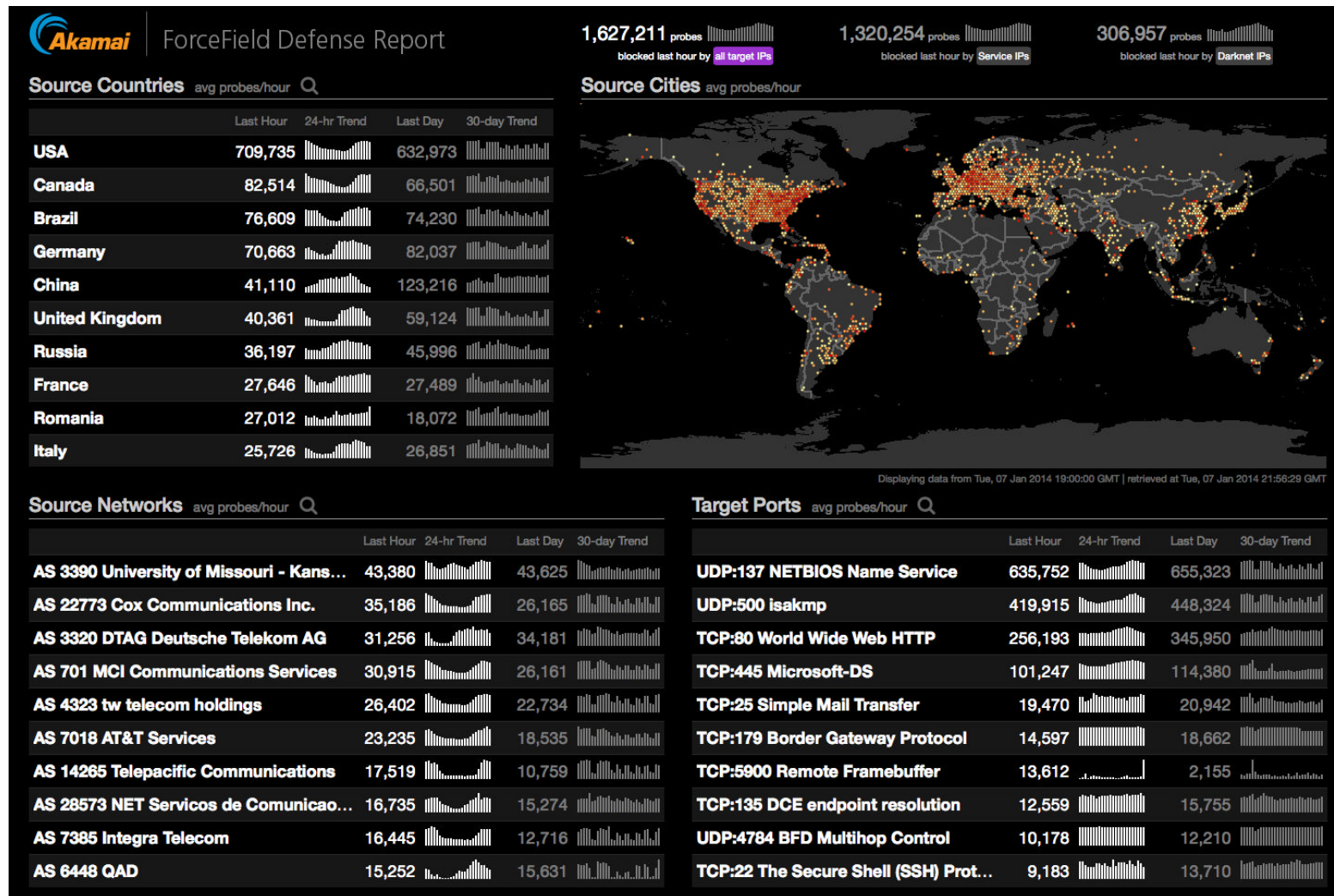
Thu 01 Mar 2014 00:00 UTC Date & Time
Fri 02 Mar 2014 00:00
Sat 03 Mar 2014 00:00
Sun 04 Mar 2014 00:00
Mon 05 Mar 2014 00:00
Tue 06 Mar 2014 00:00
Wed 07 Mar 2014 00:00
Thu 08 Mar 2014 00:00
Fri 09 Mar 2014 00:00
Sat 10 Mar 2014 00:00
shaded values indicate +/- 3 standard deviations from median

Create a PDF Chart

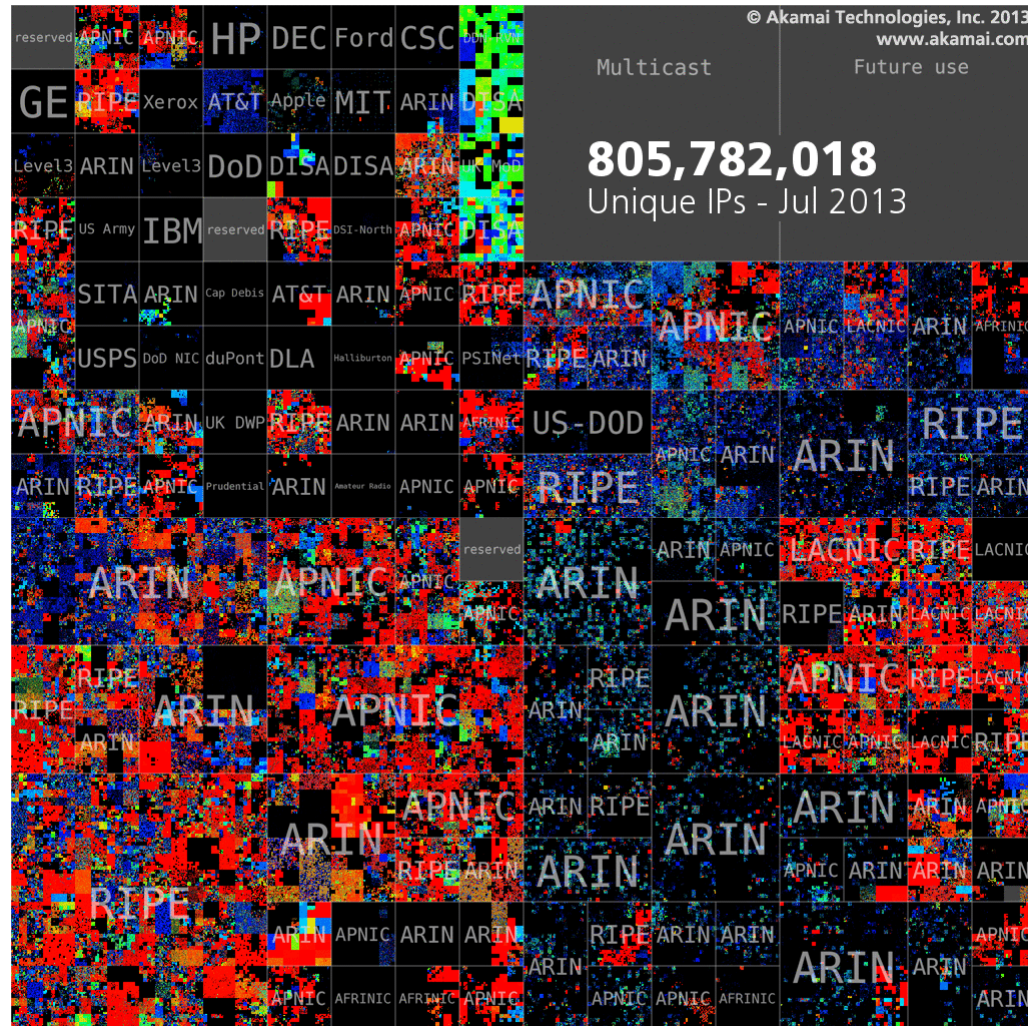
Create a Public PNG Chart

Get Data File

ForceField Dashboard (Attack Traffic)



Unique IPv4 Addresses Seen By Akamai



MapNOCC: General Purpose Query Display



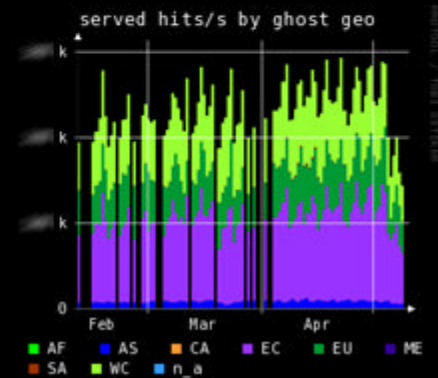
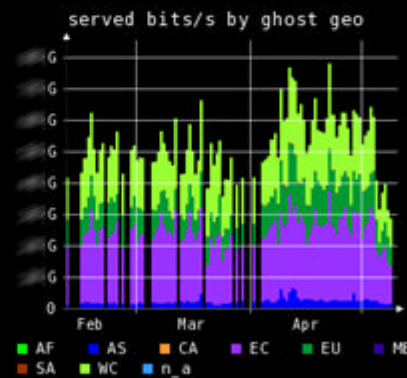
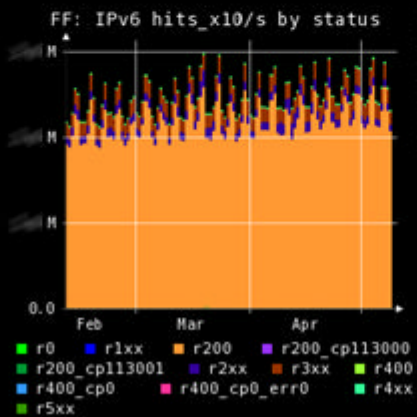
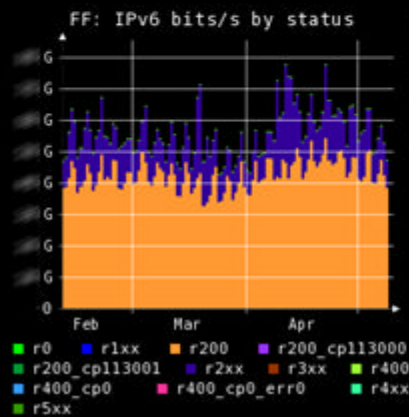
MapNocc Queries home | What's
Happening with MapNocc

last refreshed 2014/05/09
21:24:03
[miniurl for this page](#)

IPv6 Statistics

Time
Period: 1 quarter
Time Zone: Eastern
Page Size: xlarge

Note that cpcode=1 includes ghostmon liveness checks.
[Some more links and details are here](#)



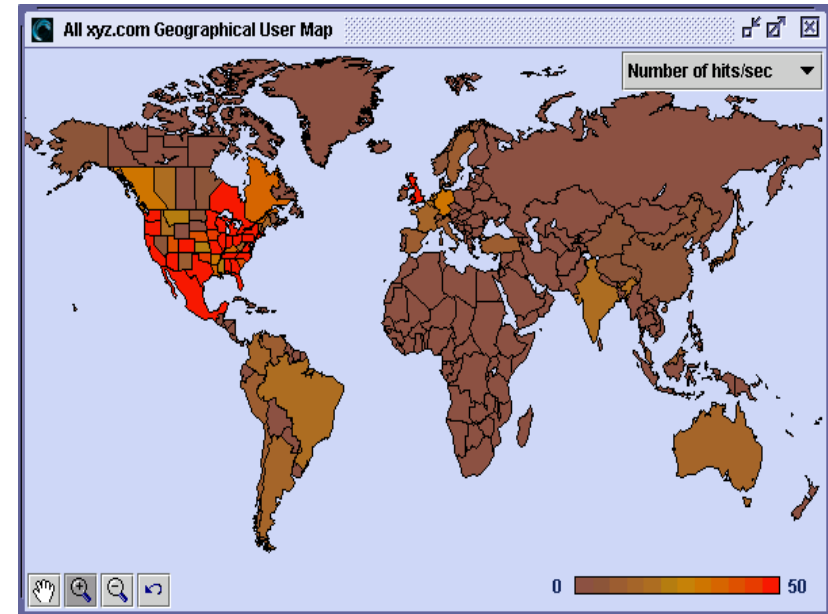
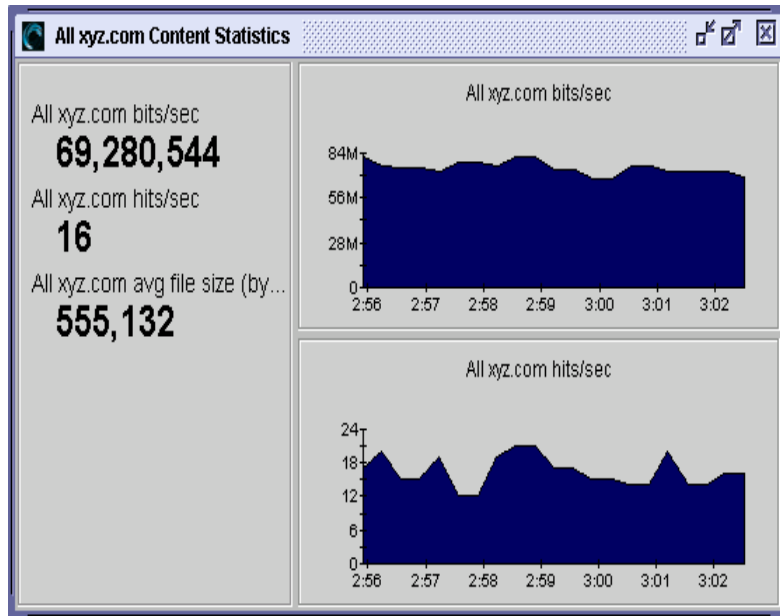


INTERNAL

CUSTOMER VALUE CONFIRMATION

EXTERNAL

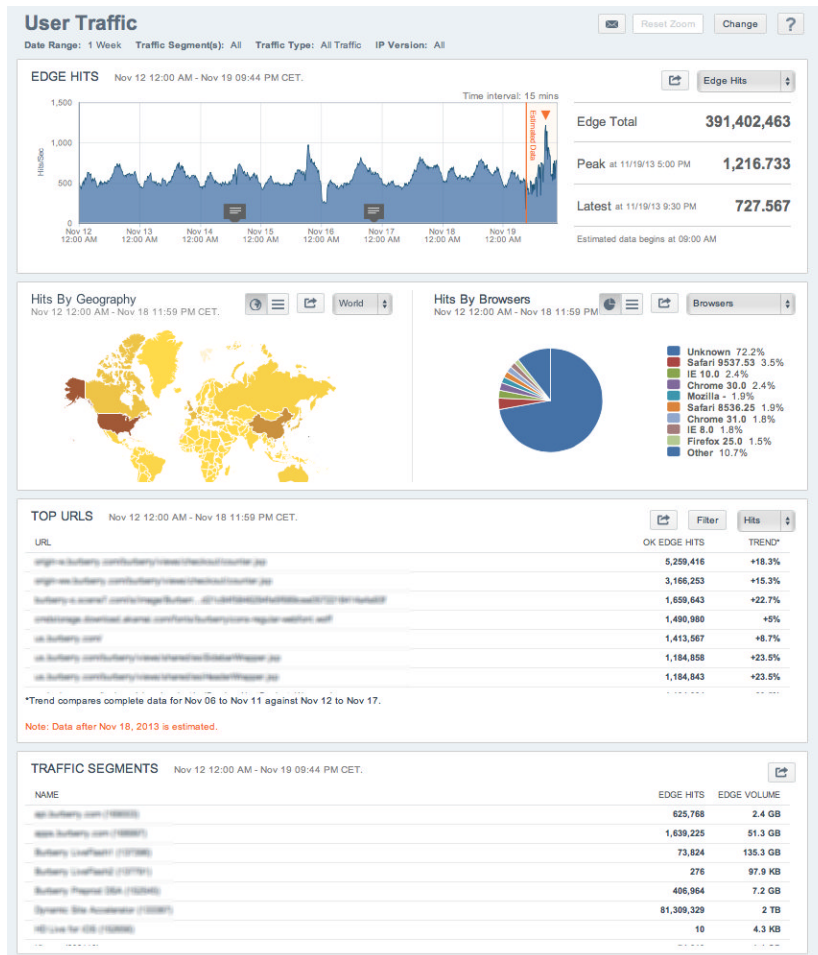
GeoFlow Traffic Analyzer & Reporter (1999)



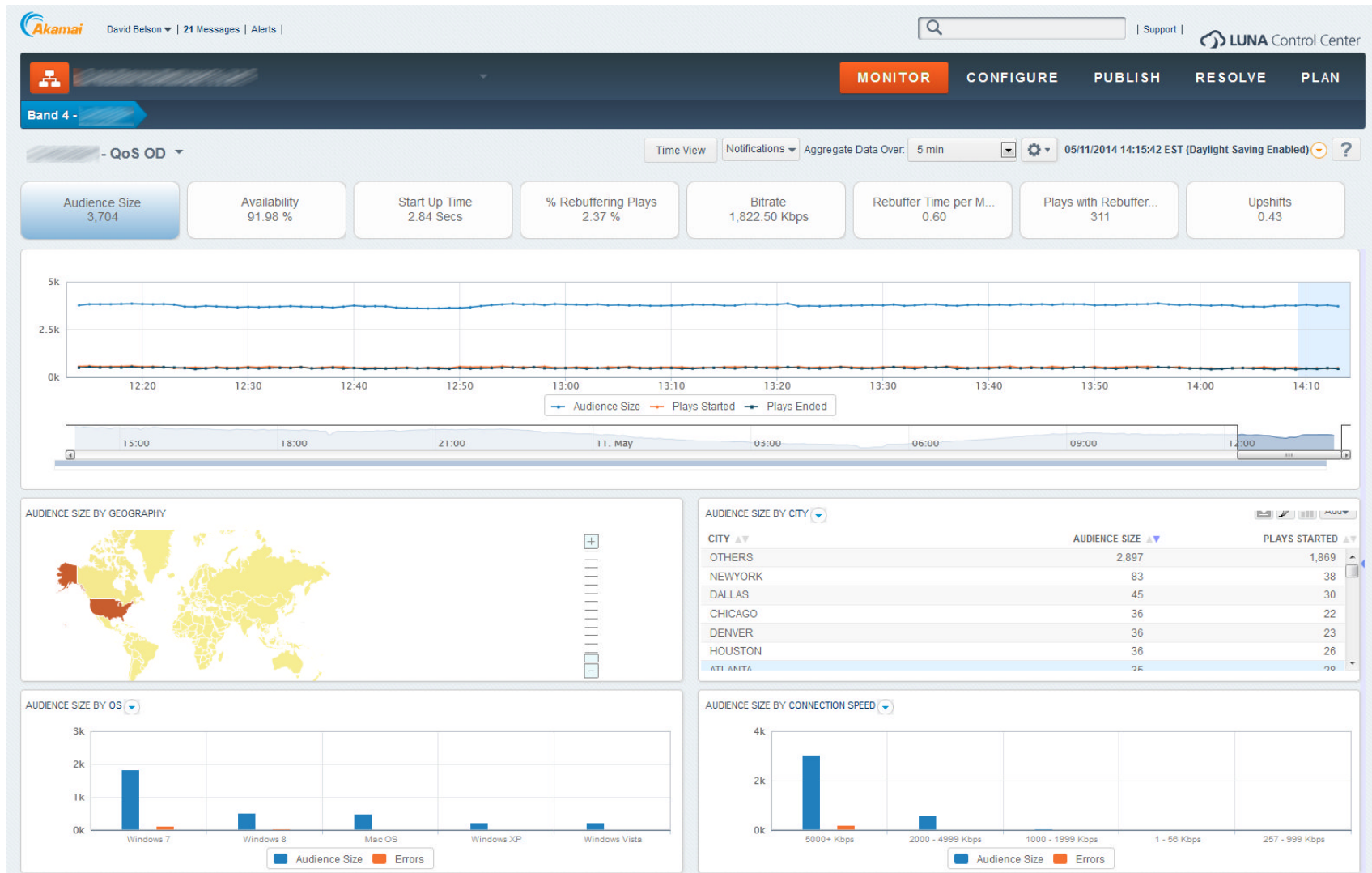
Luna Control Center



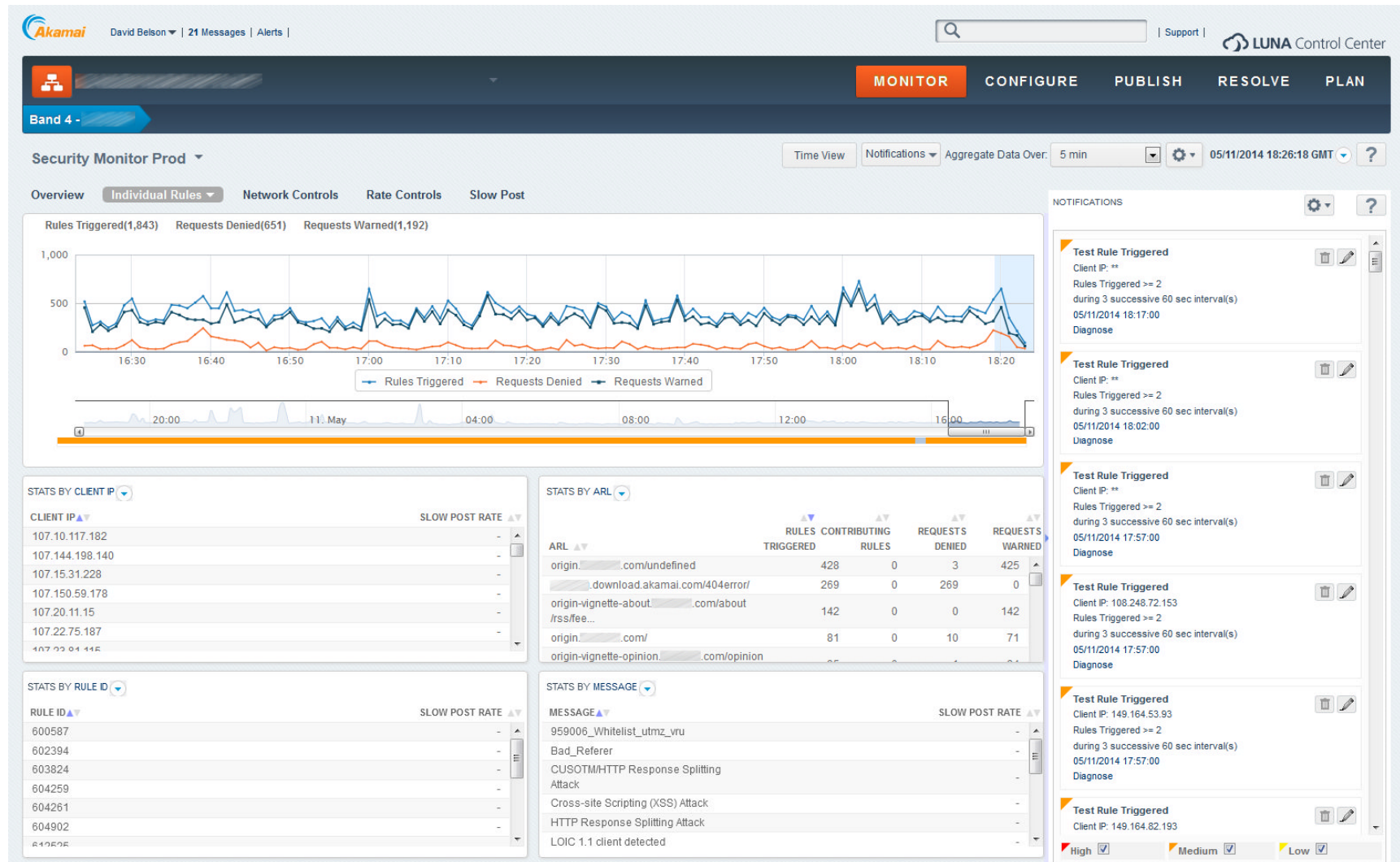
100



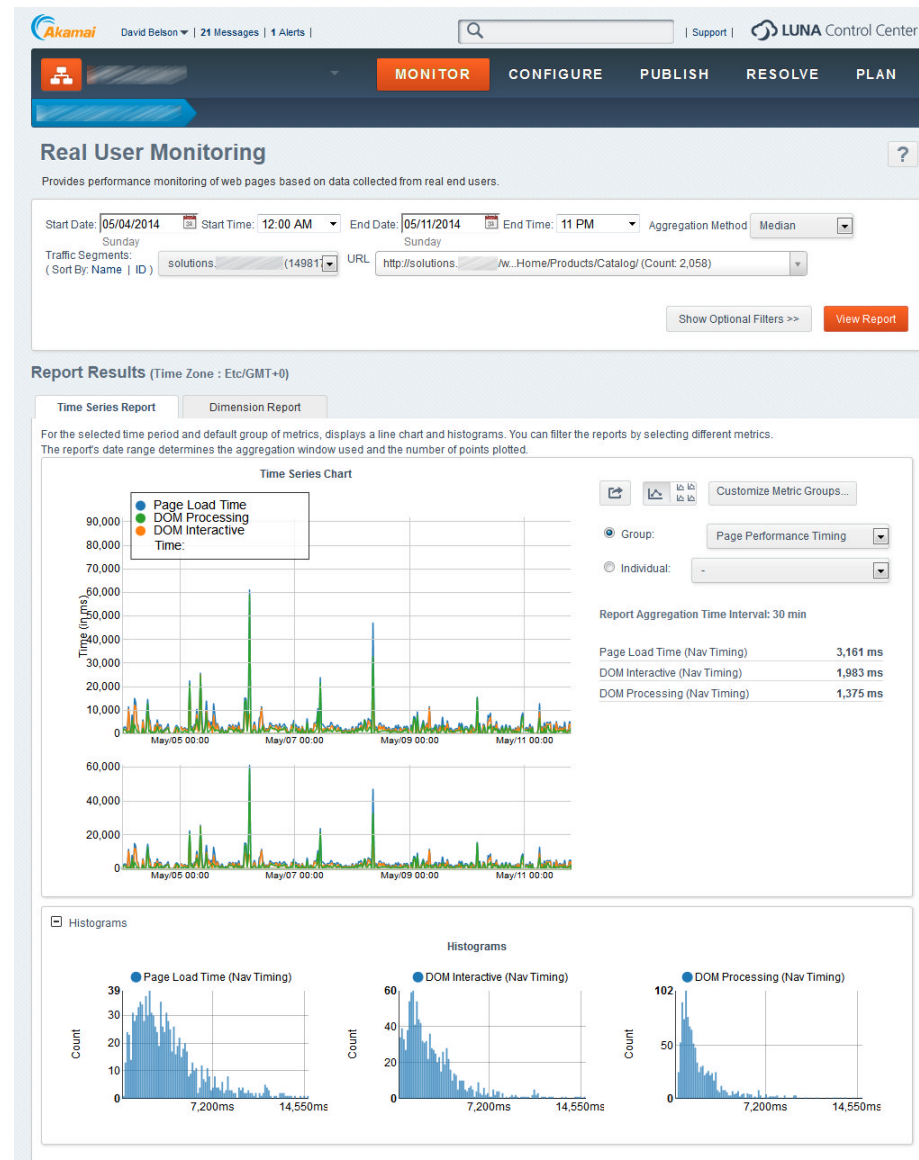
Media Analytics



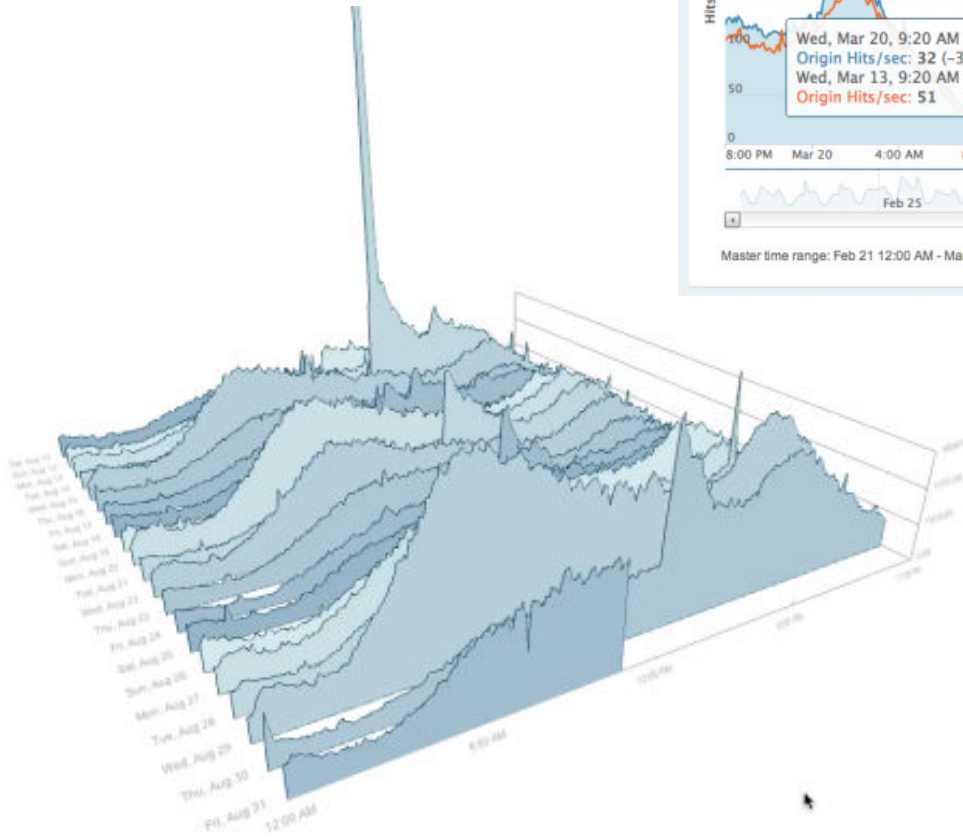
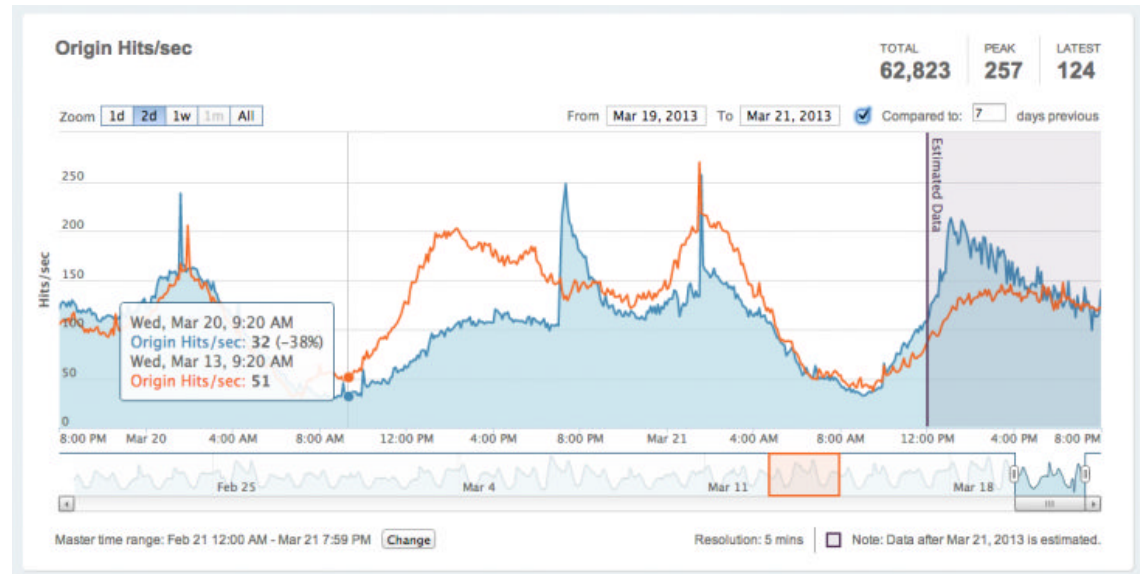
Security Analytics



Real User Monitoring (RUM)



“Luna Labs” User Experience Design Prototypes



Case Studies



Customer #1:

- Initially used Akamai to accelerate static product marketing sites.
- Undertook a data center consolidation (17 >> 1)
- Added SharePoint-driven Thought Leadership site & separate multi-country/language Product/Brand site to Akamai
- Reduced Microsoft License cost by >\$1M/yr from this consolidation
- Gained SEO benefits for Baidu and Google due to performance
- Enabled sites to work in China (never had before)
- Added KONA to protect against DDOS threats

Customer #2:

- Clinical Trials portal having performance issues, little-to-no adoption in EMEA region
- Enabled Web Application Accelerator
- In three weeks, their test was in the top three for given research study as measured by a 3rd party
- Three more clinical applications were added to Akamai over time, now main brand site too

Customer #3:

- Enabled Web Application Accelerator for training and internal education application to enable adoption of this portal application on any device around the globe.
- Previously, application was only available inside the network.
- With Akamai, customer successfully migrated it to the DMZ with user authentication and SSL certificates.
- Adoption levels now acceptable, and application trouble tickets are under an acceptable level. Previously, nearly every user that logged on had issues.

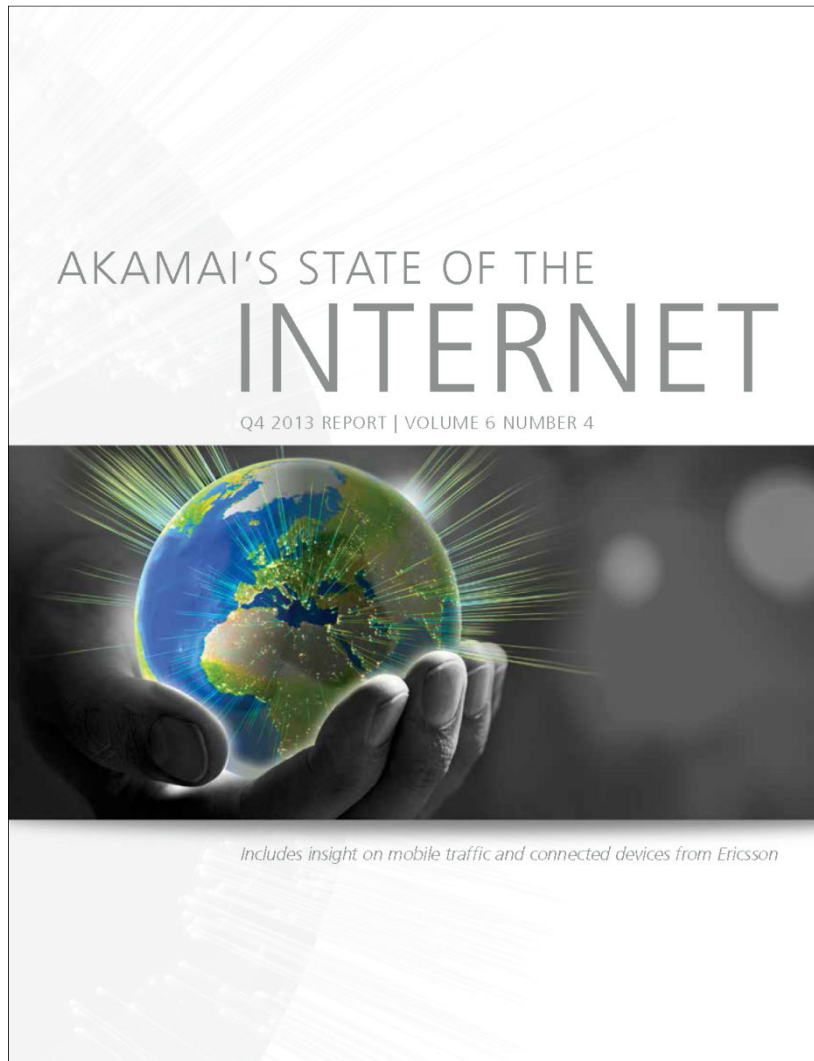


INTERNAL

CUSTOMER VALUE CONFIRMATION

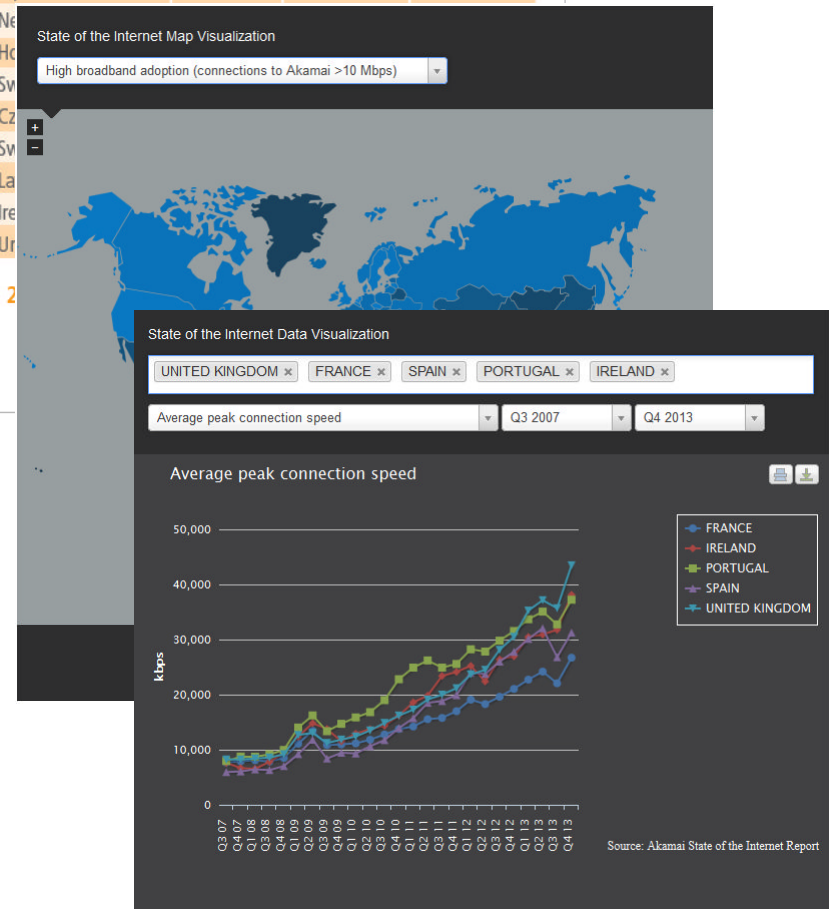
EXTERNAL

State of the Internet Report & Visualizations

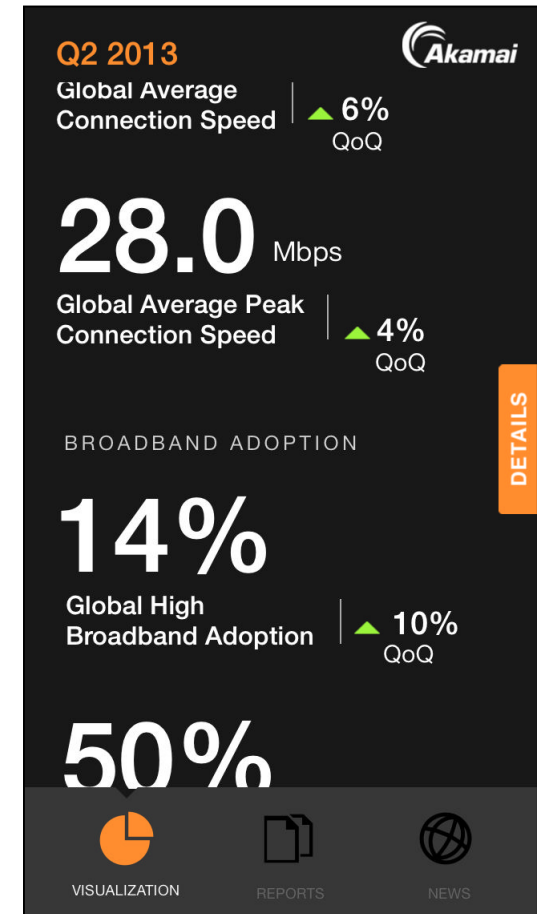
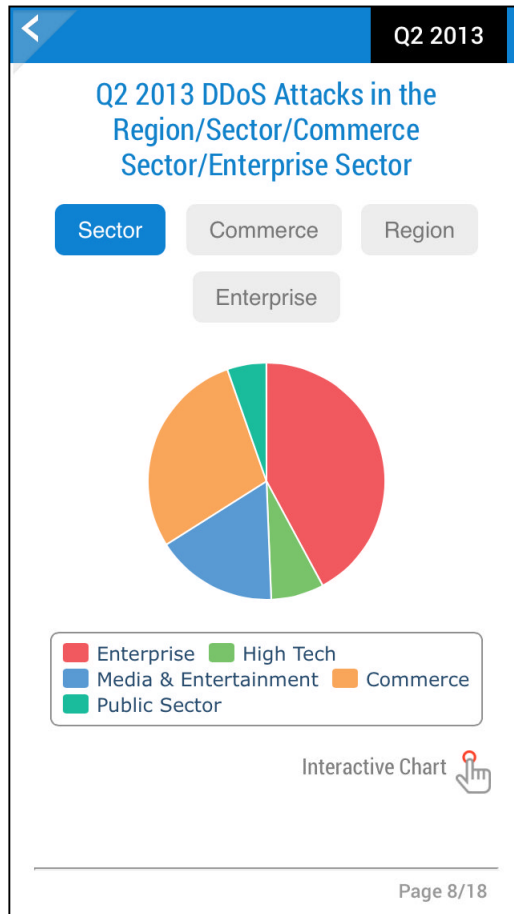


Country/Region	Q4'13 Avg. Mbps	QoQ Change	YoY Change
— Global	3.8	5.5%	27%
1 South Korea	21.9	-1.1%	57%
2 Japan	12.8	-4.4%	14%
3 Ne			
4 Ho			
5 Sw			
6 Cz			
7 Sw			
8 La			
9 Ire			
10 Ur			

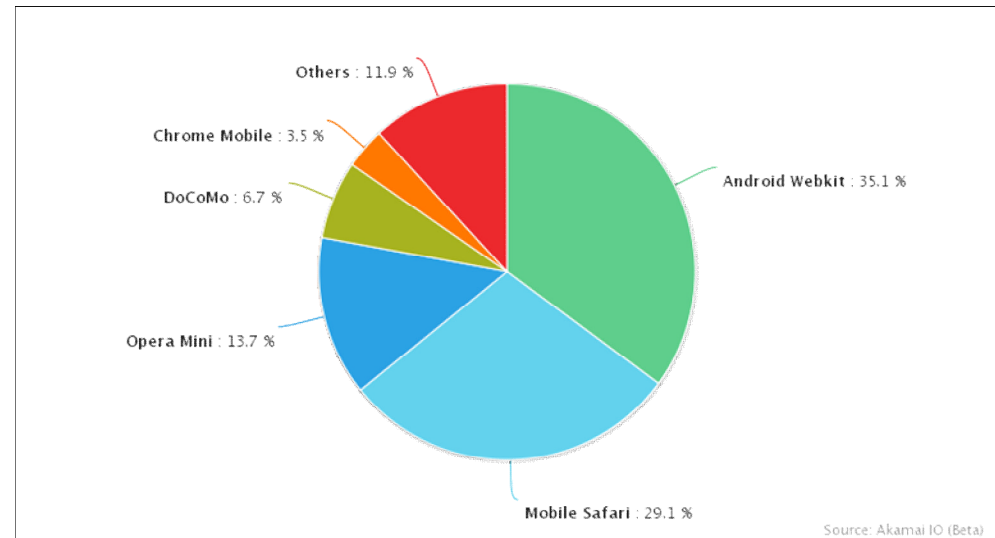
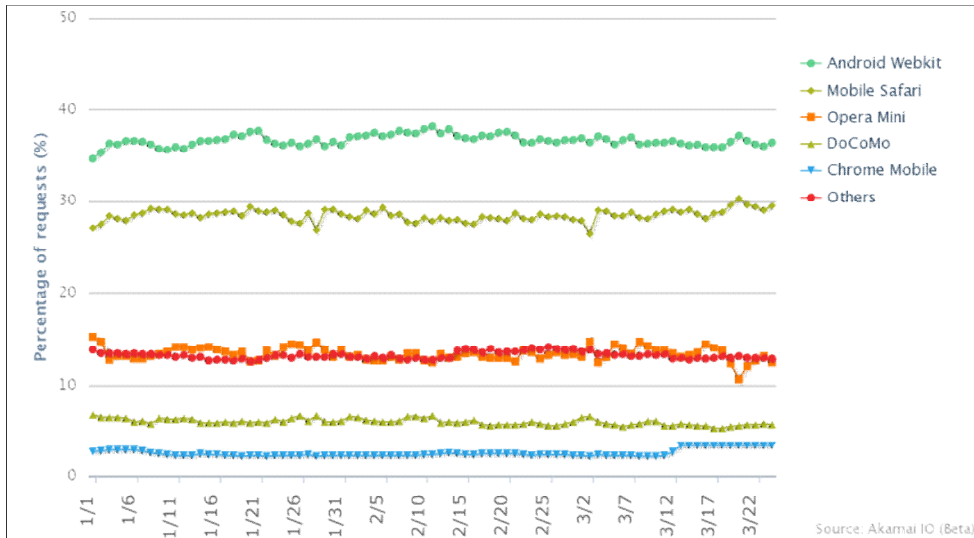
Figure 2



State of the Internet iOS App



Akamai IO



Akamai in 60 Seconds



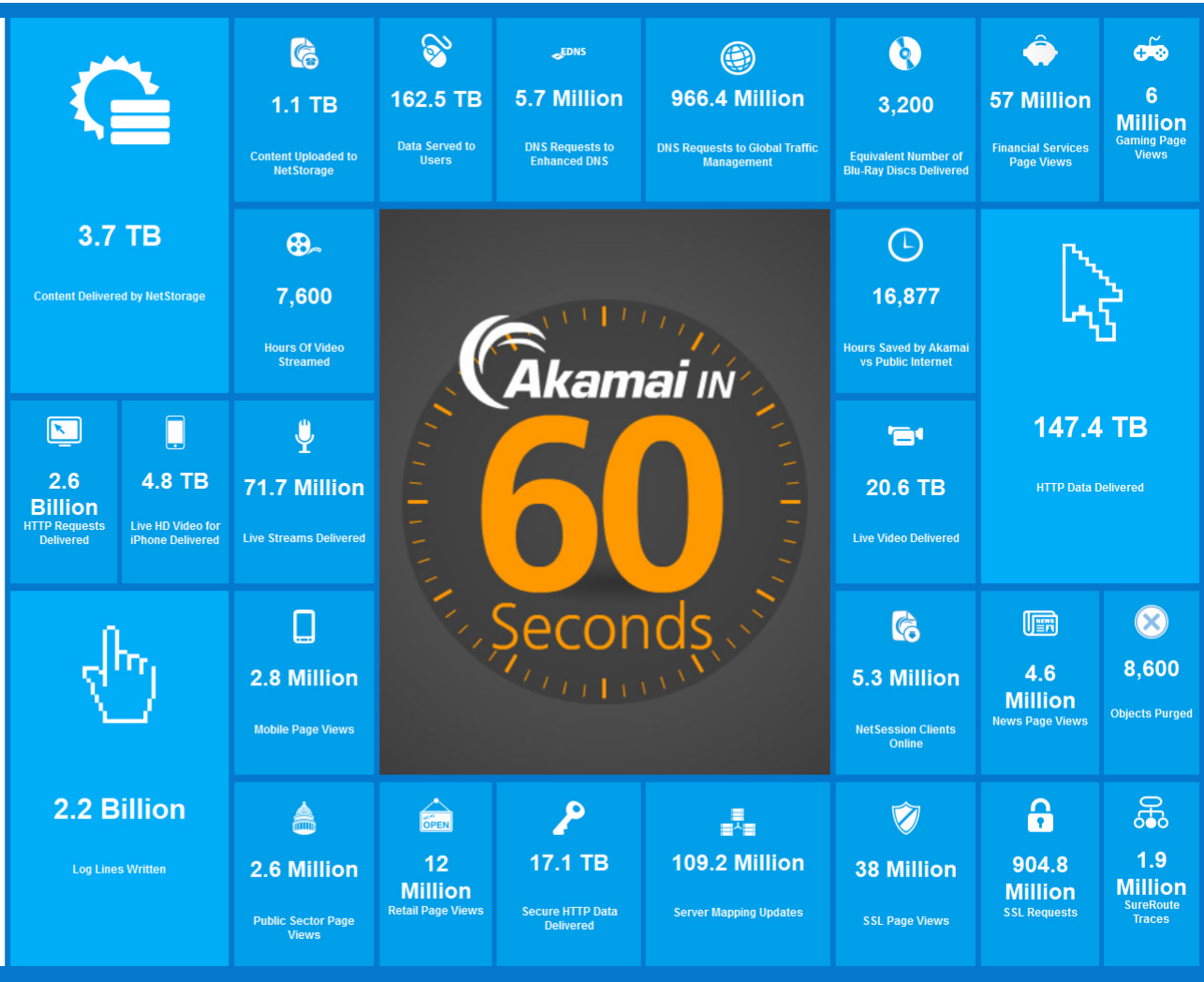
Akamai in 60 Seconds

In addition to serving some two trillion content requests a day, there's even more happening on the Akamai Intelligent Platform at any given time: video streaming, route optimization calculations, DNS lookups, and content purges, just to name just a few. With so much taking place, "Akamai in 60 Seconds" presents a snapshot of the broad range of activity occurring on the platform.

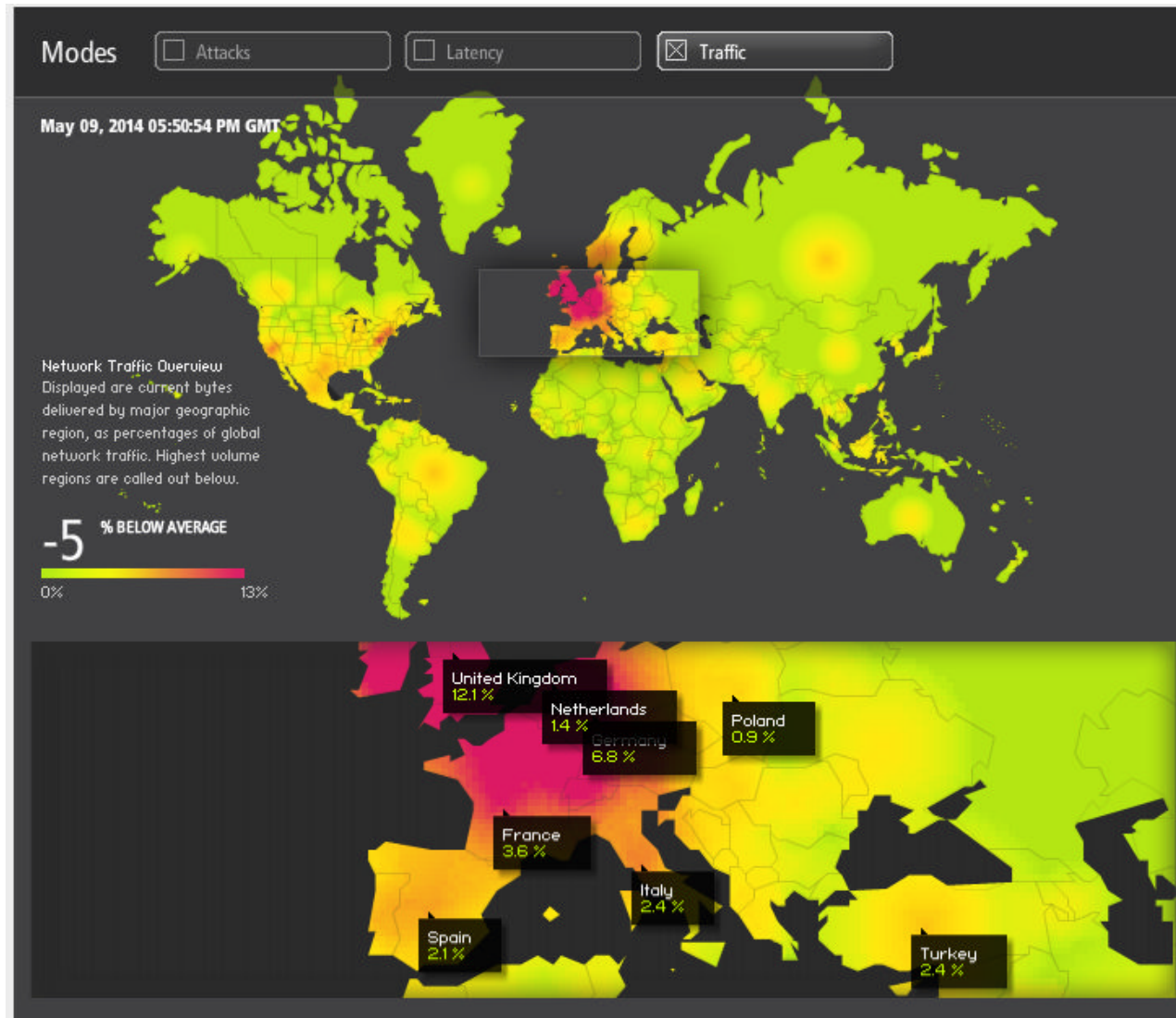
The data points shown here represent peak values for the given metrics as measured across the Akamai Intelligent Platform during a 60-second time period. They're collected from several internal Akamai systems and databases, and are normalized to one minute. Because the graphic is showing peak values over time, the numbers shown will change when new peaks are reached, and it is likely that event-related activity will drive updates to some metrics.

[Facebook](#)
[Tweet](#)
[Google +](#)
[LinkedIn](#)
[Pinterest](#)
[Email](#)

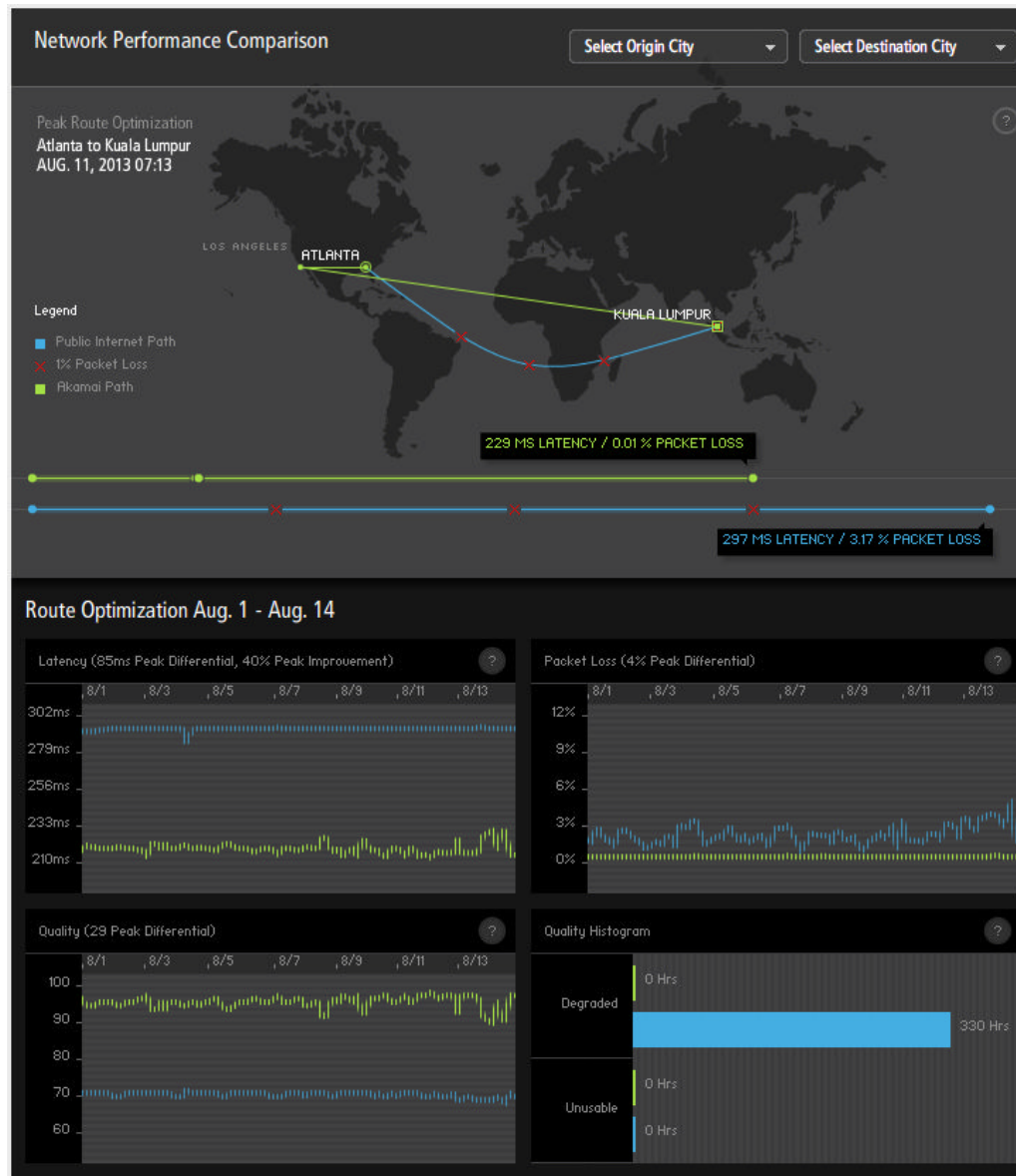
Please send questions, comments, feedback to 60seconds@akamai.com



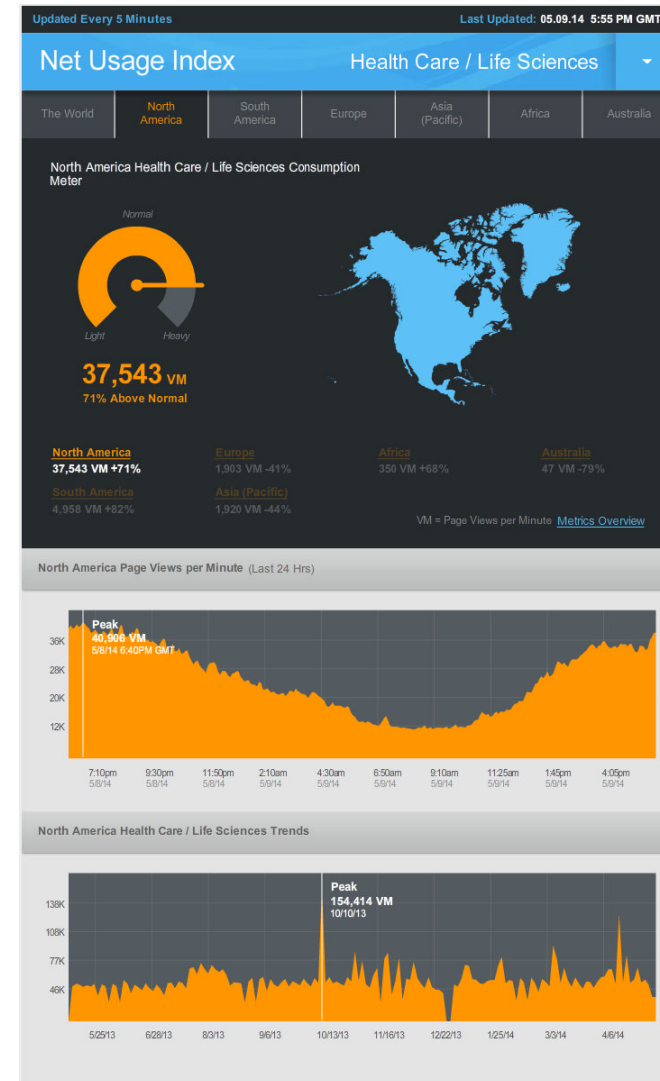
Real-Time Web Monitor



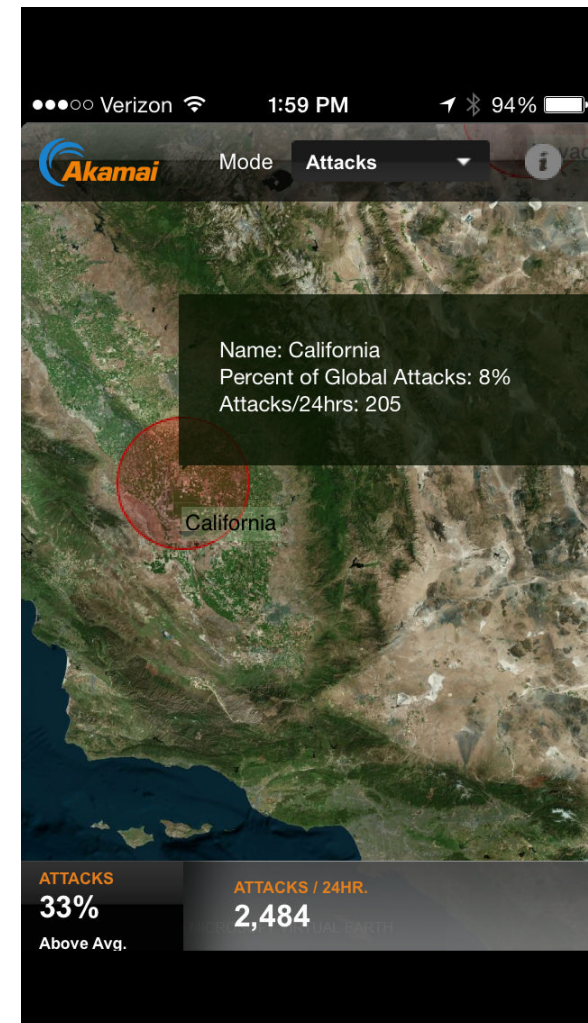
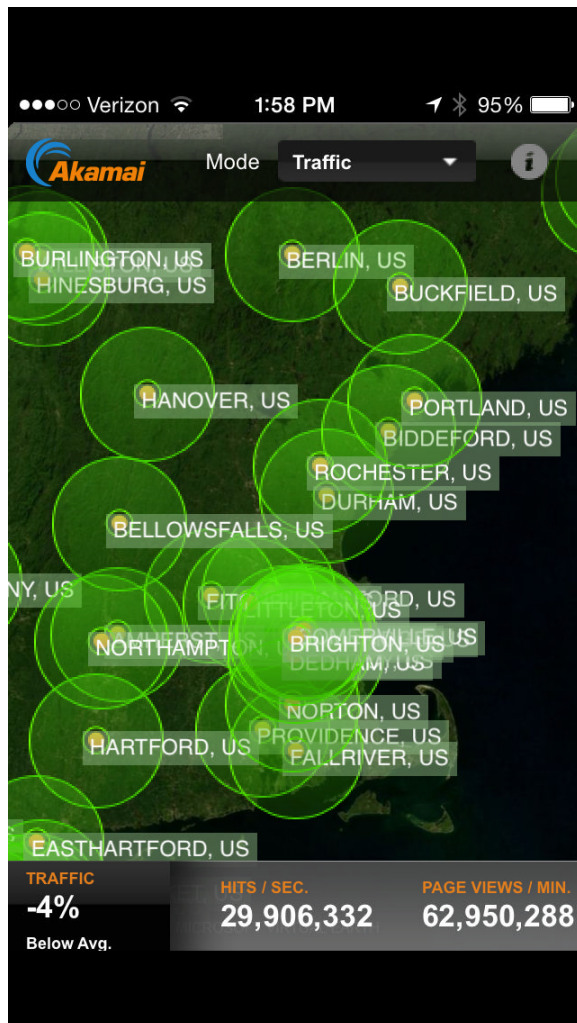
Network Performance Comparison



Net Usage Index



Akamai Internet Visualization iOS App



PROLEXIC

Now part of Akamai

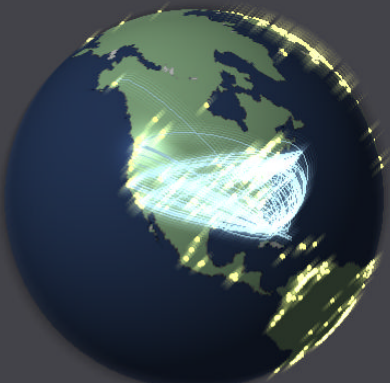
PLXpatrol

Up-to-the-Minute Intelligence and Insight on DDoS Threats

[Home](#) | [Customer Support](#) | [Customer Portal Login](#)

Under Attack?
Click Here

Contact: +1 (888) 368 2923 or +001 (954) 620 6005



Select any source country to see the attack targets. The number of recent attacks is displayed in parenthesis

- ☒ United States (327)
- ☐ Albania (7)
- ☐ Algeria (2)
- ☐ Argentina (18)
- ☐ Armenia (1)
- ☐ Australia (9)
- ☐ Austria (13)
- ☐ Azerbaijan (1)
- ☐ Bangladesh (30)
- ☐ Belarus (1)
- ☐ Belgium (3)
- ☐ Benin (1)
- ☐ Bolivia (3)
- ☐ Bosnia and Herzegovina (3)
- ☐ Brazil (142)

Recent 5,000 attacks, tracking 84,725,840 bots

For Maximum Viewing – Please open Browser to Fit Screen

20

Country Rankings

24 Hours All Time

Rank	Bots	Country
1	6207	China
2	2778	United States
3	850	France
4	713	Germany
5	705	Thailand
6	642	Saudi Arabia
7	596	Venezuela
8	590	Canada
9	484	Turkey
10	453	Indonesia
11	428	United Kingdom
12	374	Russian Federation

NUMBER OF COUNTRIES: 165
Recent Bots: 20,705

Live Stream

News Feed Subscribe

PROLEXIC

prolexic: Prolexic adding DDoS mitigation capacity to stop future #cyberattacks - 1.2 Tbps planned. [#news #security](http://t.co/RQ8k9pORcm)

PROLEXIC

prolexic: 200 Gbps #DDoS attack is likely before the end of this quarter, says Prolexic CEO Hammack. [#denialofservice #news](http://t.co/RQ8k9pORcm)

PROLEXIC

PLXSERT: New release of a URL scanner that checks C2 callback URLs to see if they are a part of the Dirt Jumper Botnet <http://t.co/a8WFI6ND>

PROLEXIC

PLXSERT: RT @prolexic: Prolexic Issues Dirt Jumper Threat Advisory and Releases Free Security Scanner <http://t.co/mFnsX8Z>

PROLEXIC

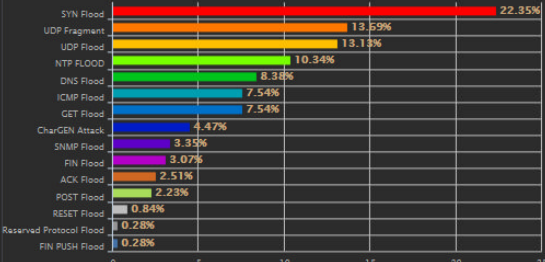
prolexic: Simple, practical steps you can take to minimize the impact of a #DDoS attack. Download now: [#infosec #ddosprotection](http://t.co/htu6pRUGir)

PROLEXIC

prolexic: Minimize enterprise impact from #DDoS attacks and develop a mitigationplaybook #pressrelease #infosec <http://t.co/htu6pRUGir> #whitepaper

Attack Types

30 Days All Time



Attack Type	Percentage
SYN Flood	22.35%
UDP Flood	13.59%
UDP Fragment	13.13%
NTP Flood	10.34%
DNS Flood	8.38%
ICMP Flood	7.54%
GET Flood	7.54%
CharGEN Attack	4.47%
SNMP Flood	3.35%
FIN Flood	3.07%
ACK Flood	2.51%
POST Flood	2.23%
RESET Flood	0.84%
Reserved Protocol Flood	0.28%
FIN PUSH Flood	0.28%

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Questions?



- Visualizing Akamai
http://www.akamai.com/html/technology/visualizing_akamai.html
- Akamai State of the Internet
<http://www.akamai.com/stateoftheinternet>
- Akamai in 60 Seconds
<http://www.akamai.com/60seconds>
- Akamai IO
<http://www.akamai.com/io>
- PLXpatrol
<http://www.prolexic.com/plxpatrol/>
- Akamai State of the Internet iOS App
<https://itunes.apple.com/us/app/akamais-state-of-the-internet/id800491468?mt=8>
- Akamai Internet Visualization iOS App
<https://itunes.apple.com/us/app/akamai-internet-visualization/id502695146?mt=8>