The State of the Internet

1ST QUARTER, 2013 EXECUTIVE SUMMARY
Akamai’s globally-distributed Intelligent Platform allows us to gather massive amounts of information on many metrics, including connection speeds, attack traffic, network connectivity/availability/latency problems, and IPv6 growth/transition progress, as well as traffic patterns across leading Web sites and digital media providers. Each quarter, Akamai publishes the State of the Internet Report.

This quarter’s report includes data gathered from across the Akamai Intelligent Platform in the first quarter of 2013 about attack traffic, broadband adoption, and mobile connectivity, as well as trends seen in this data over time. In addition, this edition of the report includes insight into so-called “account checker” attacks that targeted e-commerce sites, the states of IPv4 exhaustion and IPv6 adoption, Internet “events” and disruptions that occurred during the quarter, and observations from Akamai partner Ericsson on data and voice traffic growth on mobile networks.

Security
During the first quarter of 2013, Akamai observed attack traffic originating from source IP addresses in 177 unique countries/regions. Note that our methodology captures the source IP address of an observed attack, and cannot determine attribution of an attacker. China’s share of attack traffic fell to 34% during the quarter, while Indonesia’s grew from near zero to over 20%. Attack traffic from the United States fell from 10% to just over 8%. Attack traffic concentration grew significantly from the fourth quarter of 2012, with the top 10 ports seeing 80% of observed attacks. Significant growth was seen in attacks targeting Ports 80 (HTTP) and 443 (SSL), most of which came from Indonesia. During the first quarter of 2013, Akamai’s customers reported being targeted by 208 DDoS attacks, up 4% from the prior quarter. Enterprise customers were most frequently targeted, hit by 35% of the attacks. In addition, during the first quarter Akamai observed attempted account takeover behavior for a number of merchants resulting from reuse of credentials obtained from other sites.

Internet and Broadband Adoption
Akamai observed a 3.1% increase in the number of unique IPv4 addresses connecting to the Akamai platform, growing to nearly 734 million, or approximately 34 million more than were seen in the fourth quarter of 2012. Looking at connection speeds, the global average connection speed climbed 4.0% to 3.1 Mbps, and the global average peak connection speed increased 9.2% to 18.4 Mbps. At a country level, South Korea had the highest average connection speed at 14.2 Mbps, while Hong Kong once again had the highest average peak connection speed at 63.6 Mbps. Globally, high broadband (>10 Mbps) adoption grew 10% quarter-over-quarter to 13%, and South Korea remained the country with the highest level of high broadband adoption, growing to 50%. Global broadband (>4 Mbps) adoption grew 5.8% to 46%, with Switzerland taking the top spot with 88% broadband adoption.

Mobile Connectivity
In the first quarter of 2013, average connection speeds on surveyed mobile network providers ranged from a high of 8.6 Mbps down to a low of 0.4 Mbps. Average peak connection speeds ranged from 45.6 Mbps down to 2.8 Mbps. Based on traffic data collected by Ericsson, the volume of mobile data traffic increased 19% between the fourth quarter of 2012 and the first quarter of 2013, while doubling year-over-year. In contrast, mobile voice traffic grew only 4% during that same year-over-year period.

Analysis of Akamai IO data collected across the first quarter from a sample of requests to the Akamai Intelligent Platform indicates that for users of devices on cellular networks, the largest percentage of requests came from Android Webkit (41-44%), ahead of Apple Mobile Safari (30-38%). However, for users of mobile devices across all networks (not just cellular), Apple Mobile Safari accounted for approximately 60%, with Android Webkit responsible for 20-33% of requests. (The ranges are related to updates made to the back-end data source in the middle of the quarter.)
How much closer are we to complete IPv4 exhaustion?

Available IPv4 address space is becoming an increasingly scarce resource across the Internet. Because the Asia Pacific (APNIC) and European (RIPE) registries have reached their last available blocks of 16 million IP addresses, they delegated relatively few in the first quarter. Registries in North/Latin/South America (ARIN, LACNIC) and Africa (AFRINIC) have more addresses available, but have become more conservative in delegation. How is your business preparing for the eventual exhaustion of IPv4 address space? More importantly, have you taken steps yet to adopt IPv6?

How much streaming traffic can an event-driven flash crowd drive?

On March 13, in the one-hour period between when white smoke announced the election of a new Pope to when Jorge Mario Bergoglio was announced as the newly elected Pope Francis, live streaming traffic on the Akamai Intelligent platform quadrupled, peaking at over 2.1 Tbps. (The Platform concurrently handled ~10 Tbps of other traffic without incident.) Can your Web site/application or media delivery infrastructure scale in real-time to meet extreme levels of event-driven demand?

To read the full 1st Quarter, 2013 State of the Internet Report on broadband adoption, connection speeds, Internet penetration, mobile usage, attack traffic, and more, or to use the associated data visualization tools, go to: www.akamai.com/stateoftheinternet

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