

This report includes the percentages of fraud found in programmatic digital advertising traffic during the fourth quarter (Q4) of 2018. On a monthly basis, Fraudlogix's pixel-based technology regularly monitors data from 640 million unique users, 1.2 billion unique devices, and 300+ million URLs. We map the latest devices, locations, bots, behaviors, and hacking tactics that are being used by digital fraudsters.

In this report invalid traffic (IVT) and sophisticated invalid traffic (SIVT) — i.e., ad traffic that was generated by bots, malware, and through hijacked devices — is referred to as fraudulent traffic.

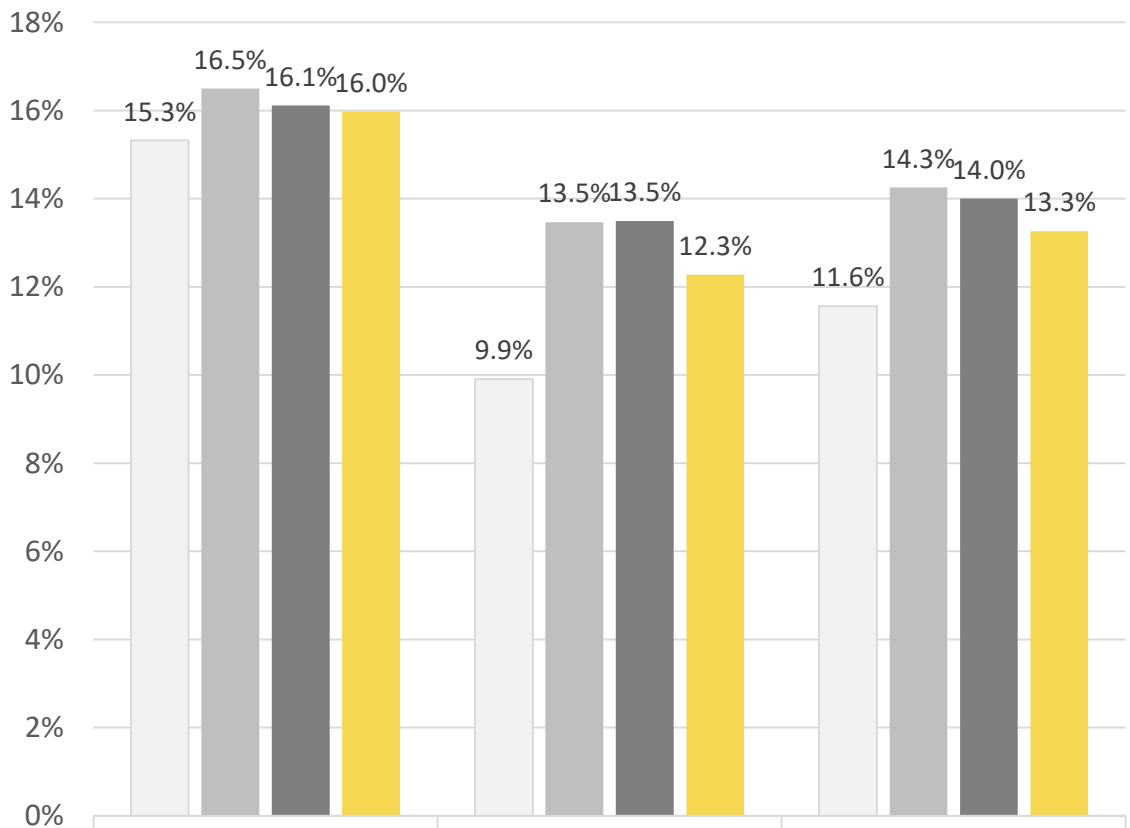
Q4 Highlights

- 13% of all ad traffic was fraudulent.
- 12% of mobile ad traffic and 16% of display ad traffic was fraudulent.
- November saw the highest percentage of fraudulent traffic at 14%.
- The Latin American region (LATAM) had the highest percentage of fraudulent traffic globally at 16%.
- Argentina had the highest percentage of fraudulent traffic (19%) among the ten countries with the highest volume of ad traffic.
- A majority (68%) of ad traffic came from Chrome browsers, and 14% of that was fraudulent.
- Internet Explorer had the highest percentage of fraudulent traffic (26%) among the six most popular browsers.
- The highest percentage ad traffic (16.3%) came from devices running the Windows 10 operating system, followed closely by 16.2% of devices running the Android 8 operating system.
- Windows 7 had the highest percentage of fraudulent traffic (19%) among the ten most popular operating systems.

Q4 Fraudulent Ad Traffic by Device Type: Desktop vs. Mobile

In Q4, 13.26% of all ad traffic was fraudulent, 15.97% of desktop traffic was fraudulent, and 12.28% of mobile traffic was fraudulent. November saw the highest percentages of fraudulent traffic at 14.26%. Fraudulent mobile ad traffic jumped 36% between October and November going from 9.9% in October to 13.47% in November.

% of Fraudulent Traffic by Month, Q4 2018



	Desktop	Mobile	All traffic
Oct.	15.32%	9.90%	11.56%
Nov.	16.50%	13.47%	14.26%
Dec.	16.12%	13.50%	14.00%
All Q4 Data	15.97%	12.28%	13.26%

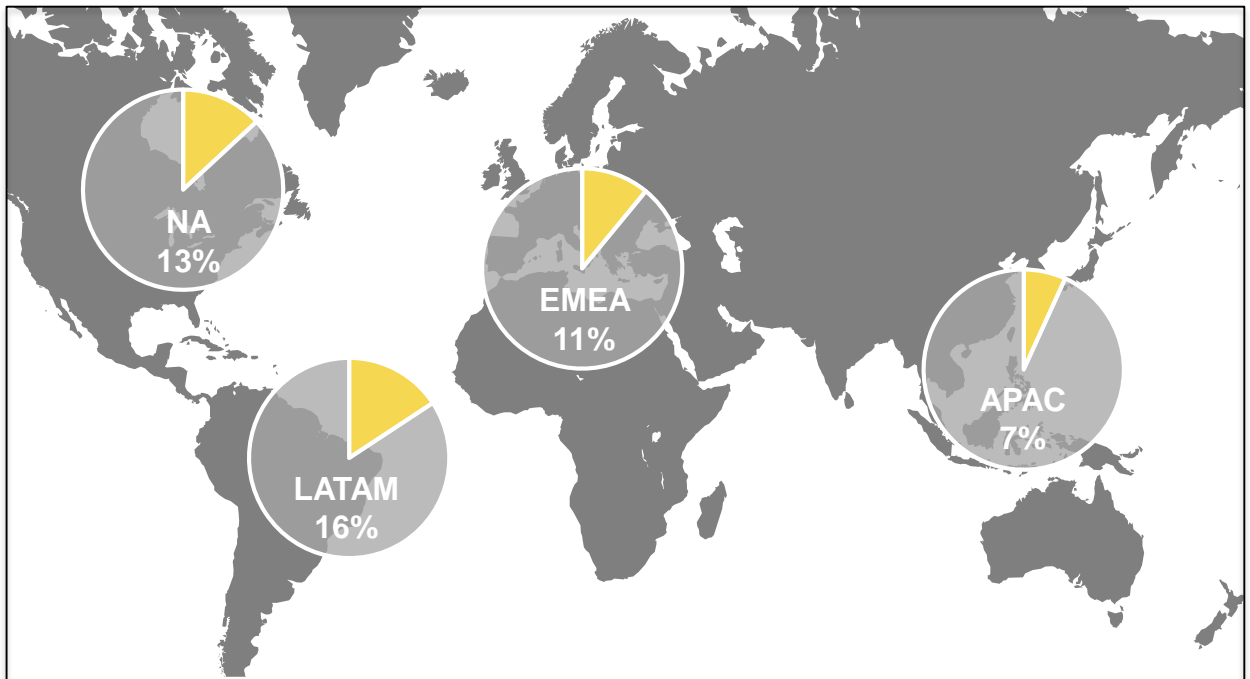
Q4 Percent (%) of Fraudulent Ad Traffic By Global Geographic Business Region

Looking at all data during Q4, broken down into four major global business regions [Asia–Pacific, including India (APAC); Europe, the Middle East and Africa, including Russia (EMEA); Latin America, including Mexico (LATAM); and North America (NA)] , we found that the LATAM region had the highest percentage of fraudulent ad traffic at 15.75%, followed by the NA region with 13.12%, EMEA region with 10.97%, and APAC region with 6.81%.

Q4 Percent (%) of Fraudulent Ad Traffic By Country

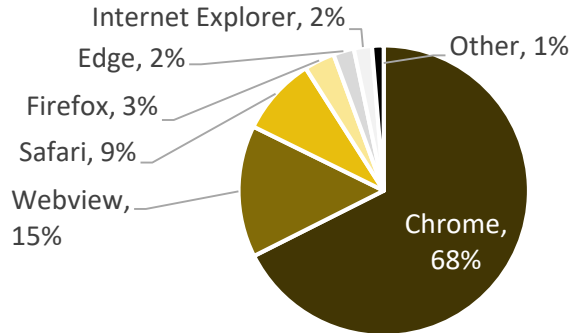
Among the ten countries with the highest volume of ad traffic in Q4, Argentina had the highest percentage of fraudulent traffic at 18.98%, followed by Spain at 18.19%, Brazil at 17.8%, Great Britain at 15.65%, Mexico at 14.75%, the United States at 13.94%, France at 8.89%, Germany at 6.55%, Canada at 6.3%, and Italy at 4.66%.

Percent (%) of Ad Traffic that's Fraudulent Per Global Region



Q4 Percent (%) of Ad Traffic By Browser

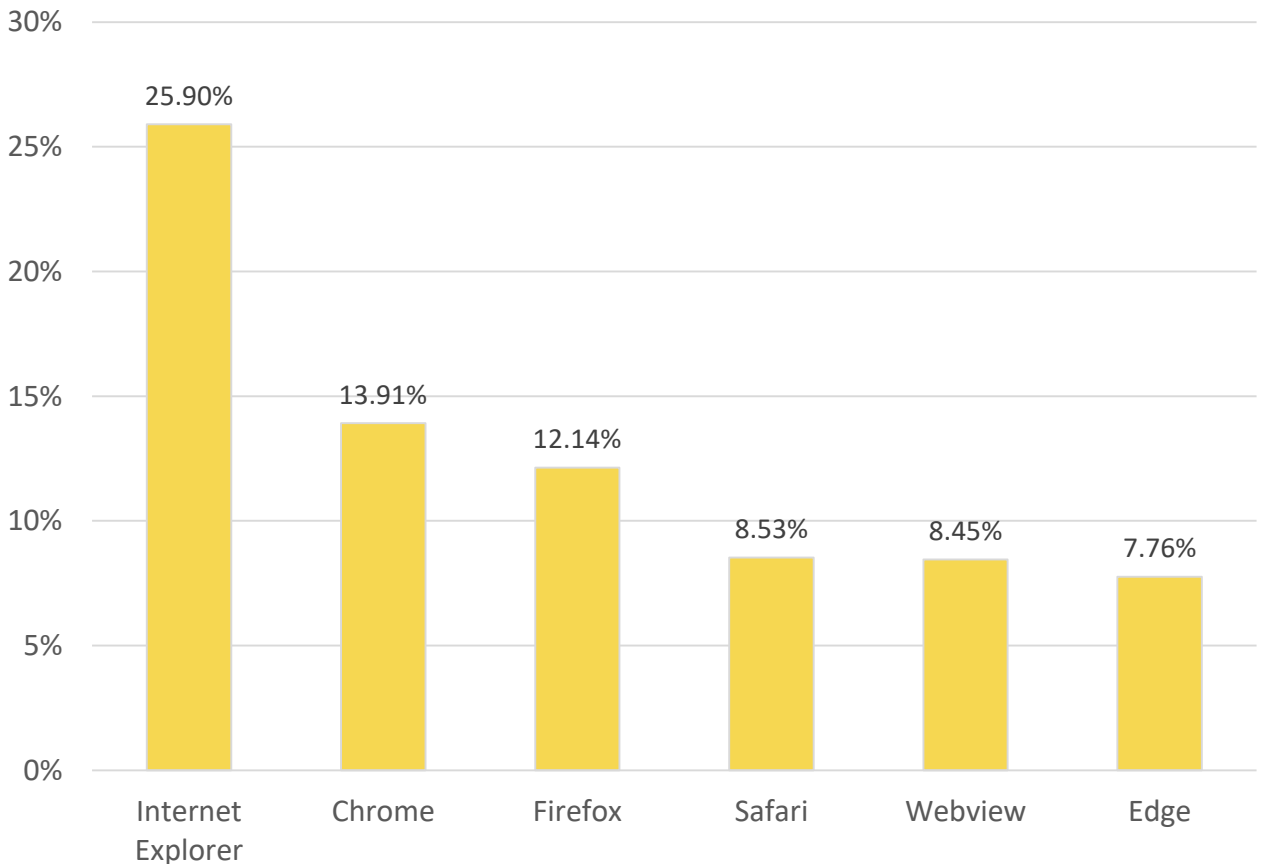
In Q4 we found that 67.6% of ad traffic came from the Chrome browser, followed by 14.7% from in-app Webview browsers, 8.7% from Safari, 3.4% from Firefox, 2.3% from Edge, and 2.0% from Internet Explorer.



Q4 Percent (%) of Fraudulent Ad Traffic By Browser

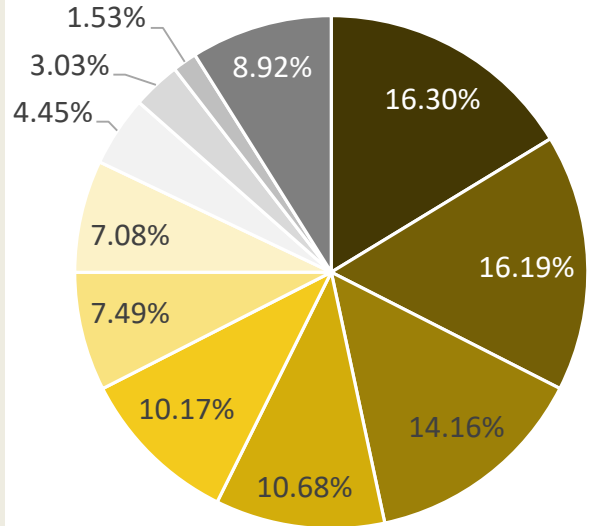
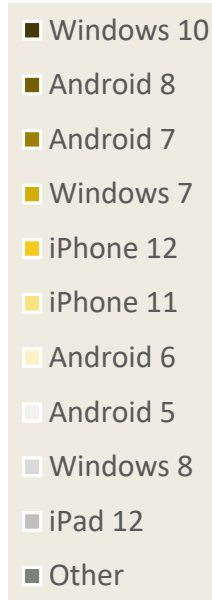
We found that Internet Explorer had the highest percentage of fraudulent ad traffic at 25.9%, followed by Chrome at 13.9%, Firefox at 12.1%, Safari at 8.53%, Webview at 8.45%, and Edge at 7.8%.

% of Fraudulent Traffic by Browser, Q4 2018



Q4 Percent (%) of Ad Traffic By Operating System (OS)

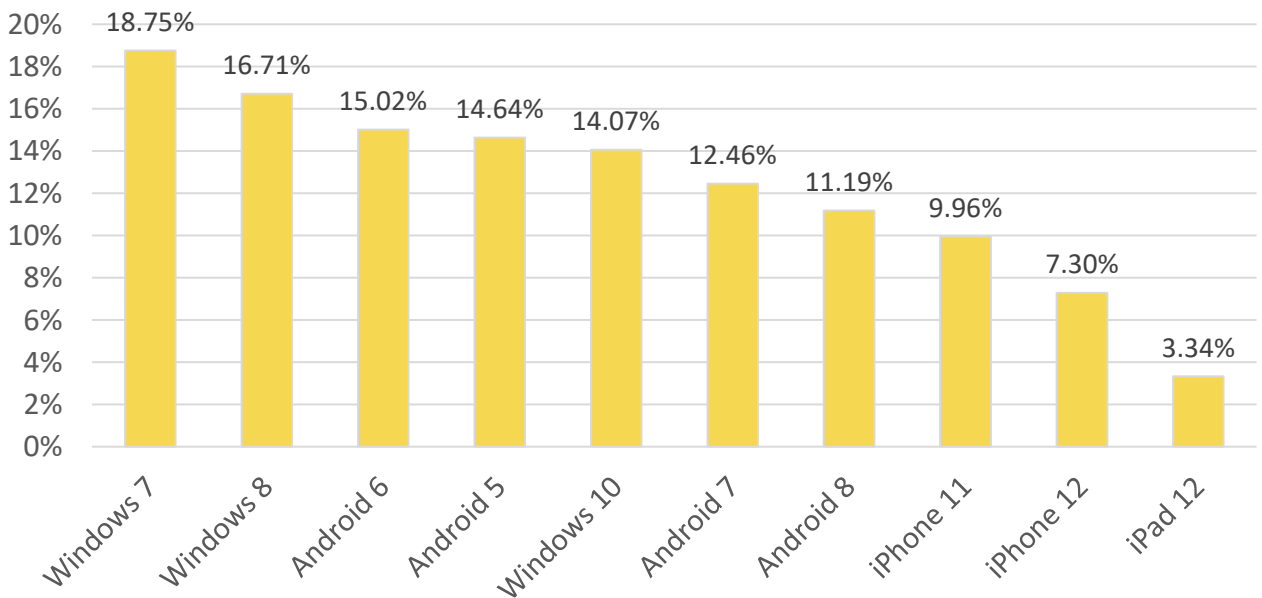
In Q4 2018, we found that the largest percentage of ad traffic (16.3%) came from the Windows 10 OS, followed by 16.19% from Android 8, 14.16% from Android 7, 10.68% from Windows 7, 10.17% from iPhone 12, 7.49% from iPhone 11, 7.08% from Android 6, 4.45% from Android 5, 3.03% from Windows 8, and 1.53% from iPad 12.



Q4 Percent (%) of Fraudulent Ad Traffic By Operating System

Of the 10 operating systems seen most often, Windows 7 had the highest percentage of fraudulent traffic at 18.75%, followed by Windows 8 at 16.71%, and Android 6 at 15.02%.

% of Fraudulent Traffic by OS, Q4 2018



About Fraudlogix

Fraudlogix is an online advertising fraud detection company founded in 2010 by industry veterans with a deep understanding of the digital ad ecosystem. It specializes in ad fraud solutions for desktop, mobile, in-app and video environments for the programmatic and affiliate spaces. Today, Fraudlogix monitors data from over 640 million unique users, millions of websites and 1.2 billion unique devices monthly.

Visit www.fraudlogix.com for more information or contact us at sales_req@fraudlogix.com.

