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Why IP Intelligence and Geolocation Technology Is One of the Top-Five Techniques to Detect and Prevent Online Fraud

A Digital Element® Industry Brief

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IP Information Ranks in the Top Five of All Tools Merchants Use

Global ecommerce sales are predicted to reach $2.05 trillion by the end of 2016, and are further estimated to grow to $3.58 trillion in 2019,[1] according to eMarketer. A downside to this explosive growth is the increased opportunity for online fraud.

In the United States, the percent of revenues retailers lost to fraud is up 11 percent over last year (2015), from 1.32 percent to 1.47 percent.[2]

We are beginning to see the repercussions of 2015's EMV migration, with fraud targeting e-commerce retailers growing rapidly. The impact of EMV migration is clearly evident, with enormous increases in attacks targeting global online retailers.

There were 69 million e-commerce attacks in the Second Quarter 2016, driven by the billions of stolen credentials available on the dark web, a black market of thousands of secret websites.[3]

In fact, online activity generated 55 percent of the fraud experienced by retailers in 2015, up from 42 percent in 2014.[4]

Not only does the actual fraud hurt, but making inadvertently wrong decisions to avoid fraud costs also impacts merchants. Up to 25 percent of declined sales transactions for ecommerce merchants were actually good sales to start.[5] Fraud tests are known to have huge rates of false positives. Online retailers are definitely paying a price in turning away more legitimate customers and manually reviewing more orders, according to a report from online fraud-prevention company CyberSource Corp., part of Visa Inc. Forty-six percent of retailers said the cost of personnel who conduct manual reviews represented the largest share of their fraud-prevention budgets.[6]

These are substantial numbers, yet careful management of the authentication process and deployment of the right tools can yield significant results in terms of online fraud reduction.

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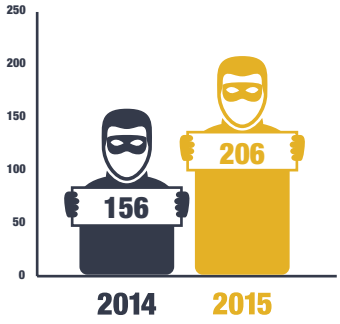
IP information ranks in the top five of all tools deployed by merchants using automated screening systems. However, not all IP solutions are created equal. There is a vast chasm between those solution providers that simply repackage publicly available data and the premium providers that deploy multiple methodologies to analyze IP routing infrastructure.

More Online Sales Mean More Online Fraud

More fraudulent internet transactions are occurring in line with the strong growth of online sales.



The average number of successful fraudulent transactions grew 32.1 percent year over year in 2015, with retailers reporting an average of 206 fraudulent transactions per month compared with 156 in 2014.[7]

There were 27 fraud attacks for every 1,000 e-commerce transactions in the Fourth Quarter 2015, an 11 percent increase from the Third Quarter and a staggering 215 percent increase from the First Quarter.[8]

The retail industry should continue enhancing security features, in particular for online sales.

Not All IP Address Vendors are Created Equal

There are several suppliers and systems available that can determine where an IP is and, for a small investment, can provide that location—but is it the right one? Determining the correct location of an IP address and discovering other critical fraud-prevention data, such as proxies, requires advanced infrastructure analysis, as opposed to simply "scraping" internet registries or repackaging publicly available free data.

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Digital Element's premium NetAcuity® IP data, at its most granular level, can accurately locate internet users down to the ZIP+4 level without invading their privacy. The coverage is global, with accuracy at 99.99 percent at a country level. Data is refreshed regularly. Importantly, Digital Element can also determine how a user connects, enabling the identification of other data that merchants need to effectively combat fraud, such as Virtual Private Networks (VPNs), satellites, anonymisers, tors, mobile devices, Internet Service Providers (ISPs), domains and hosting centers.

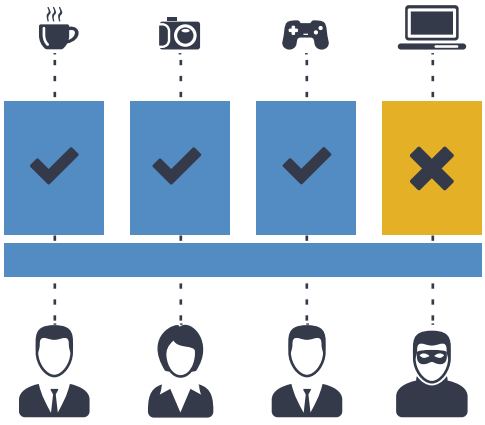
This all is achieved by combining IP routing infrastructure analysis with anonymous location insight gleaned from a network of global commercial partners, device-derived data and reverse geocoding data feeds.

NetAcuity is an effective one-source solution that is simple to integrate into merchant systems and manage in house. Conversely, publicly available data has patchy global coverage, is rarely updated, is limited in terms of data parameters identified and is inherently inaccurate.

Multiple Fraud Types Exist

The greatest threats for digital merchants are: Clean fraud, ID theft, friendly fraud, phishing and botnets. Digital Element's NetAcuity IP Intelligence and geolocation solution delivers technology that can lift the cloak of the fraudsters and expose their anonymity.

Invest in Smarter Rules



Building smarter rules around fraud detection and automating the process is proven to increase detection rates, reduce false positives and improve the shopping experience. IP Intelligence and geolocation technology can be used to automatically block suspect traffic, request verification (via email or SMS), or flag suspect activity for further internal review.

Geography is only part of the fraud-detection landscape. Smart merchants take IP geolocation further than just location, by using NetAcuity's advanced intelligence parameters to identify proxies, VPNs, anonymisers, tors, mobile devices, ISPs, domains and hosting centers. By providing more than just geography data, Digital Element can help retailers identify greater numbers of suspicious online connections.

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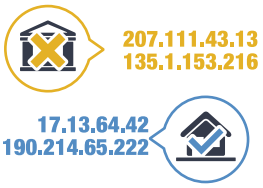
What Rules Should Be Employed?

Check IP Address for Country of Origin

A company trading internationally will often block common high-risk fraud countries such as Nigeria, India, Pakistan and Russia. Additionally, if a user is known to reside in a specific country, access to an account from another country could be deemed suspect. A basic "registry scraped" system will not be able to accurately determine the location of a user. Also, free IP data cannot identify if visitors are masking the country they are accessing the internet from (via a proxy or anonymiser), allowing potentially fraudulent activity to take place.



Domain Names

Reviews of known fraud domains and risky internet locations, such as public Wi-Fi hotspots, internet cafes and university/ colleges, should be regularly conducted.

Bill-to/Ship-to IP Address Locations

If the bill-to/ship-to IP addresses do not match, an automated red flag can be passed for further review, or the account holder could be asked for verification via an email or text.

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Proxies

Understanding the type of proxy a visitor is connecting to the internet with, such as anonymous, transparent, corporate, public, education or AOL, can trigger fraud alerts. Responses to the type of proxy can vary depending on what type of proxy it is—for example, an anonymous proxy may warrant a higher fraud score than a corporate one. By identifying connections that obscure the end-user location or those that seek to portray a connection from an "acceptable" city or country can now be easily identified and categorized.

Hosting

End-user traffic should generally not be seen from hosting or data centers as these types of facilities are designed for traffic to pass through, not originate from. Some cloud browsers do use these centers, but services are patchy and not widely developed. Reviewing these with other CRM data is highly recommended before order acceptance is confirmed.

Home, Business and ISP

Additional layers of intelligence can be added that identify whether a connection is a home or business as well as which ISP is being used. The data can be used to build profiles of previous connectivity to assess differences or anomalies over time.

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When Should Rules Be Employed?

The critical points of any authentication or payments system are during sign up, login, purchase, funds deposit or withdrawal.

Ideally, you should continually check the IP address at every stage of the purchase process to ensure the session has not been hijacked.

Mobile Transactions Still Create an IP Connection

Between 2016 and 2020, U.S. mobile commerce (mCommerce) sales are projected to grow nearly 260 percent, from $79 billion to $284 billion. Data also reveals rising fraud in the mobile channel: from 2015 to 2016, LexisNexis' mobile Fraud Multiplier climbed 12 percent, from $2.08 to $2.33 for every dollar of fraud. Meanwhile, the average percentage of successful fraud transactions in the mobile channel jumped from 26 percent to 35 percent.[9]

Using a mobile device for ecommerce and completing the purchase still creates an IP connection. Users are 80 percent more likely to be on a Wi-Fi network due to speed, convenience or cost—only 20 percent connect via 3G, 4G or LTE.

A Wi-Fi connection is just the same as a desktop setup in that NetAcuity can accurately determine the Wi-Fi location and the type of proxy being used so the same rules apply. If the connection is via 3G, 4G or LTE, then network characteristics identifying the service provider and its connection hub are seen.

Compelling Reasons to Know More about Your Traffic

Understanding where and how visitors connect to a site can result in more accepted orders, less false positives and reduced fraud. Automation is key. NetAcuity IP Intelligence and geolocation technology provides a simple one-source solution to enable digital businesses to reduce fraudulent activity by as much as 90 percent.

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In fact, 51 percent of merchants are currently using IP geolocation information as one layer of fraud prevention, with another 13 percent planning to add it.[10]

Easy to deploy on an internal server in less than 20 minutes and queried by various supplied APIs, NetAcuity has a response time that is fast and reliable at less than 0.03 milliseconds—allowing it to handle up to 30,000 requests per second.

There needs to be more awareness and understanding about the value of investing in a multi-layered approach for fraud mitigation. Findings show that the right multi-layered approach can justify upfront costs of the solution investment as greater accuracy yields more positive results on the bottom line.[11]

Knowing more about where your customers are coming from as well as how they connect will deliver many of the improvements needed in merchant payment systems.

Digital Element is the only dedicated global provider of IP Intelligence and geolocation data. With more than 15 years of industry experience and knowledge, Digital Element can put together a specialized team to advise on how to defend your company against online fraud.

Examples of Data Used to Protect Retail Clients

Country	Latitude/Longitude	ASN
Region/State	Phone Area Code	Home/Business
City	Time Zone/Language	Industry Codes
Zip/Postal Codes	Proxies	Company Name
Custom Regions	ISP	Org Name
Connection Type	Domain	Demographics
Mobile Carrier		

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NetAcuity Technology Tidbits

- Client Platform – Integrates with all operating systems and applications
- Support – 24/7 technical support
- Latency – As low as .03 milliseconds
- Database updates happen weekly
- Provides support for a variety of popular 64-bit computing platforms: Red Hat Enterprise Linux 5, Solaris 10-Intel, Solaris 10-SPARC,Windows 2003/2008 Server
- Processing – Capable of over 30,000 IP resolutions per second
- Restful Interface
- Up-and-running in as little as 20 minutes
- Application Programming Interface (API) – C, C++, C#, Perl, Java, PHP, .NET, Ruby, Python, Node.js, Apache Module, and Nginx or custom support available for a wide array of programming languages and client platforms

[1] eMarketer, "Worldwide Retail Ecommerce Sales: eMarketer's Updated Estimates and Forecast Through 2019," 2015.

[2] LexisNexis, "The True Cost of Fraud Study," 2016.

[3] ThreatMetrix, "Cybercrime Report Q2 2016," 2016.

[4] Welter, Hilary, "Ecommerce Driving Retail Fraud Loss," Hardware Retailing, Jan. 11, 2016.

[5] Payments.com, "Online Fraud Attack Rates Soar Since October," Apr. 19, 2016.

[6] Davis, Don, "Eretailers Cut Fraud Rate, Turn Away More Good Customers," Internet Retailer, Apr. 29, 2016.

[7] LexisNexis, "The True Cost of Fraud Study," 2015.

[8] Meola, Andrew, "Online Fraud Attacks in the US Are Growing at an Alarming Rate," Business Insider, Apr. 20, 2016.

[9] Chargebacks911, press release, "mCommerce Trends Reveal Growth in Sales and Fraud; Chargebacks911 Reveals Solutions to Prevent Loss," Aug. 23, 2016.

[10] CyberSource, "Annual Fraud Benchmark Report," 2016.

[11] Op.cit., LexisNexis, 2016.

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Sample Digital Element Clients

E*TRADE
hulu
LogRhythm
McAfee An Intel Company
ebay
Experian
JPMorgan Chase & Co
SONY
DELL SecureWorks
intuit
SOURCEfire®
Bankrate.com Comprehensive. Objective. Free.
Symantec.
DoubleVerify
VeriSign®

About Digital Element

Since 1999, Digital Element has been providing global geolocation solutions that bring anytime, anywhere relevance and context to online initiatives—from desktops to mobile devices. The company's patented technology has been certified and accredited to deliver real-time access to accurate and reliable location intelligence without invading Internet users' privacy. For more than a decade, many of the world's largest websites, brands, security companies, ad networks, social media platforms and mobile publishers have trusted Digital Element's technology to target advertising, localize content, enhance analytics, and manage content rights as well as detect and prevent fraud.

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