GLOBAL CYBER ALLIANCE™

The Economic Value of DNS Security | EXECUTIVE SUMMARY

AUTHORS: ADAM SHOSTACK, JAY JACOBS AND WADE BAKER

New stories of widescale cybersecurity hacks, crimes and vulnerabilities seem to pop up on a daily basis. The constant stream of adverse cyber events has unfortunately caused many small businesses and consumers to live with a dread of inevitability — no matter what they do to protect themselves, they are destined to be hit by a cyber-attack.

As a result, many avoid implementing needed cybersecurity protections because they believe that the reward does not justify the cost or effort. It is imperative that we change that mindset. There are many easy-to-implement cybersecurity tools that will greatly reduce the risk of attack and prevent businesses and consumers from being another notch in a hacker's belt.

New research from the Global Cyber Alliance (GCA) has found that Domain Name Service (DNS) firewalls, which are freely available and easy to install, can prevent more than 33% of cybersecurity data breaches from occurring.

DNS is basically the switchboard for the Internet as it translates human readable names like globalcyberalliance.org to numerical addresses — otherwise known as IP addresses. In order to access websites on the Internet, your computer uses a DNS service that is usually configured by your Internet Service Provider (ISP) or your network administrator.

Through a simple tweak to a setting, DNS firewalls leverage threat intelligence from cybersecurity companies and public sources to automatically prevent users from visiting a known malicious site. Most often consumers "visit a malicious site when they fall for a phishing scam or click on a poisoned link.

DNS Firewall is a Relevant Control Against One-Third of Reported Breaches

DNS LIKELY USED IN 33.1%	DNS NOT LIKELY USED IN 66.9%

> A conservative estimate values the impact of DNS firewalls at preventing $10 billion in data breach losses over the past five years.

According to Verizon's long-running and industry-leading Data Breach Investigations Report (DBIR), there were more than 11,000 confirmed data breaches collected and analyzed over the past five years. Researchers from Shostack & Associates and Cyentia Institute were able to determine that 3,668 of those breaches would have been potentially thwarted if all users had a DNS firewall deployed.

A conservative estimate values the impact of DNS firewalls at preventing $10 billion in data breach losses over the past five years.

Further, researchers are confident that more breaches would have been prevented, but the DBIR data only records known threat actions when there are observable indicators. GCA was unable to measure every case where a DNS firewall could have protected the victim, and its estimate of the financial impact is probably biased a bit low.

With a DNS Firewall

STEP 1: SEARCH QUERY
www.example.com

QUAD9.NET DNS SERVER • 9.9.9.9

STEP 2: CHECK CACHE
✓ and return result if found

STEP 3: CHECK THREAT LIST
✗ Match Found: Return Block Reply

example.net nameserver

STEP 4: QUERY ROOT/ TLD SERVERS ✓
199.43.133.53

www

STEP 5: QUERY AUTHORITATIVE SERVER ✓
93.184.216.34

example.net nameserver
199.43.133.53

A fully detailed report that highlights the GCA methodology and research findings can be found in the following report: **THE ECONOMIC VALUE OF DNS SECURITY**