WebProfessionals.org
Community Education Certification

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In this Issue

How Cyber Security is Changing the Web Design Industry

by
Julia Eudy

When I think of the industry of web design, I think of the many talented people responsible for populating the internet with information over the past couple of decades. But our job is never done! From continual refinement of responsive design, to developing content worthy of Google's latest search strategy; our jobs as designers and web managers is an ever-evolving landscape. In today's market it is essential to stay current with technology and the threats targeting those we serve and those who search online. Without constant awareness and action by our peers in technology, cybercriminals will continue to challenge our time, patience, and livelihood.

Websites have become Key Point of Attack for Cybercriminals

While many believe that email phishing is a key entry point for most cyber criminals, it has become apparent that they are often using an unsuspecting website to hide their activity of malware designed collect valid emails and launch other criminal schemes. While some argue that nothing is hack-proof; content management systems built on open-source code have enabled the unsecure environment we now reside. It goes without saying that sharing code saves time; but is it worth the longer-term cost? Let's explore the leading CMS platform, WordPress. It is an easy-to-use interface making it popular among novice developers and DIY professionals, but it is often a prime target of hackers who specifically build robotic scripts designed to quickly search through the openly published source files looking for vulnerabilities. Technical web designers (those who know how to customize the code and apply advanced security settings) understand that keeping current on updates and effectively managing a recovery plan for the sites you have created has become a time-consuming task and one that is raising the overall cost of website management. However, the millions without some technical skillset, have like-ly already become an unsuspecting victim to one of the many ongoing threats facing the WordPress community.

A prime example of how open-source code created a breeding ground for a cyberattack happened in early 2017 when one of 20 hacking groups launched a digital turf war on WordPress by discovering a flaw found in their REST API script. A wide-spread attack impacted roughly 1.5 million pages of WordPress sites[1] across 39,000 unique domains in a matter of days as reported by security plugin developers WordFence and Sucuri. Keep in mind that only 1.5 million of the 24 billion pages running WordPress[2] are protected by these firewall applications.

Insurance Companies are Looking at Who to Blame for the Increase in Commercial Claims

From the outside looking in, the internet landscape is under attack, but who is to blame? This is a question many insurance companies are beginning to ask[3] as their costs to cover cyber-attacks on commercial policies continue to rise.

Looking at a big picture, here are some general facts to consider...

• According to the Small Business Administration, there are approximately 28 million small businesses in America which account for approximately 54% of all sales in the country. [4]
• In a 2017 report by Kaspersky Lab, the average cost for a data breach against a small and medium-sized business in North America was $117,000.[5]
• An article published in 2017 by INC Magazine, referenced a presentation made at the NASDAQ by Michael Kaiser, the Executive Director of the National Cyber Security Alliance, who stressed concerns about the attack on Small Business and that such attacks are expected to continually rise because of their (the small business professional's) lack of awareness of the pending risks.[6]
• A 2016 study performed by Ponemon Institute LLC and Keeper Security revealed that the number one type of cyber attack targeting small and medium sized businesses was through a web-based attack with the web server being the most vulnerable entry point.[7]

• That same study by Ponemon Instutute cited "**negligent employees or contractors**" as the root cause of the data breach. [7]

So, I ask you, when the Insurance companies follow the facts, who do you think they will turn to recover their loss?

• Will it be the random person who pointed out their vulnerability by successfully holding their web presence ransom? - likely not. That person is too difficult for them to track.
• Will they blame the **contractor** who their customer hired to create their website? – Yes!

In recent conversations I've had with insurance professionals, one question asked was, "Should web designers have an ethical obligation to inform an un-technical customer of the risks involved with having a website?" As a technology professional, I agreed that they should and most likely do, but it is often the customer who elects to not add to their expenses for proper technical support. Their reply – "Ok, show me the proof and we go back to our customer!"

Most web managers are aware that being hack-proof is near impossible to achieve; however, as web professionals we are hopefully more aware and have taken necessary precautions to defend our liveli-hood. Contracts, authorized "opt-out" forms proving we've informed the customer of the risks, and build-ing trusted relationships with supporting contractors are just a few first places to start; but having our own policies to cover mistakes and cyber threats should also be considered.

Like our other certifications, we are exploring re-sources necessary to develop a comprehensive train-ing and security certification to help web developers stay current with different types cyber threats that they may encounter. This certification would identify specific areas that are being targeted and give the opportunity for continued training opportunities to learn more or improve your skills in specific areas. This certification would also classify you as a Cyber Certified Web Professional which will identify to those seeking a web services provider that you have participated in training that is designed to reduce their web-based risks.

If you are interested in learning more about this certification and the time schedule for training and certification release, please send an eMail to Mark@ WebProfessionals.org and let us know your thoughts.

CITATIONS:

[1]: 1.5 million pages of WordPress sites https://www.bleepingcomputer.com/news/security/attacks-on-wordpress-sites-intensify-as-hackers-deface-over-1-5-million-pages/
[2]: 24 billion pages running WordPress https://www.cminds.com/ultimate-guide-word-press-statistics%E2%80%A8%E2%80%A8/
[3]: Insurance: https://www.iii.org/sites/default/files/docs/pdf/cyber_risk_wp_103017.pdf
[4]: SBA: https://www.sba.gov/sites/default/files/FAQ_Sept_2012.pdf
[5]: Kaspersky Lab: https://www.csoonline.com/arti-cle/3227065/security/cyber-attacks-cost-us-enter-prises-13-million-on-average-in-2017.html
[6]: INC Magazine Article: https://www.inc.com/jo-seph-steinberg/small-businesses-beware-half-of-all-cyber-attacks-target-you.html
[7]: Ponemon Institute/Keeper Security Study: https://keepersecurity.com/assets/pdf/The_2016_State_of_SMB_Cybersecurity_Research_by_Keeper_and_Pon-emon.pdf

AUTHOR BIO

Julia Eudy is a Tech-nology Consultant with specialties in Online Marketing, Web Design and Cyber Security. She teaches Content Management Sys-tems (WordPress) and Social Media Marketing at St. Charles Community College in Cottleville, MO, in addition to managing a small Online Marketing firm (Golden Services Group) that focuses on online marketing solutions for small-medium sized busi-nesses. Additionally, she is working with a group of professionals to create a training program designed to inspire K-12 students to pursue careers in technol-ogy and cyber security.

Designing the Network for our Web Design Contest

by
Jeff McCollum

Our national web design contest is changing this year. We always ask for feedback (from competitors and their advisors) and have heard a similar message for a few years. We realize the emphasis has shifted to development on a server and consumption of apis (and more). Therefore, we have made an investment in server and network technology which should position us for a few years. We realize the web is dynamic and that access to a server is a necessity these days. We also know that the cost of having an actual Internet connection is prohibitively high at the venue. Plus, we still want to focus on what individual teams know (and do not want individuals to copy and paste solutions they may find online). Therefore, we decided to develop a local server and network environment (think intranet) which will allow us to offer secure space for each team to develop their applications.

As prior competitors know, we always listen to feedback and try to incorporate it where appropriate. We believe that 2018 will mark a milestone as we move from development on individual laptops to a networked server environment. We anticipate our investment in this technology should allow us to focus more on the development aspects of our competition. Competitors – we have heard you and this is the first of many changes we anticipate in the coming years. Here is how we are configuring the network for our 2018 competition.

We established some interesting goals for the network to support competitors this year. These enhancements include:

• A server displaying an API to be accessed by competitors.
• Both wired and wireless access to the server (we know some competitors have laptops with limited wifi capabilities).

• No internet access (as usual).
• Possible wireless signal strength issues (especially with the dimensions of the competition space).
• Network segmentation.
• Restricted access between teams.
• Obviously, it needs to be portable (since we are only in Louisville for a week).
• Inexpensive (cost effective) but a solid solution.
• Centrally managed and easy to use (we all are wearing multiple hats while running this competition).

With all of these requirements in mind we started to look at several different vendors and options.

We ended up standardizing on Ubiquiti Unifi hardware and software. Ubiquiti was able to achieve all the goals and is very inexpensive for what it is providing. Below is the topology of the network with the equipment with some sample teams.
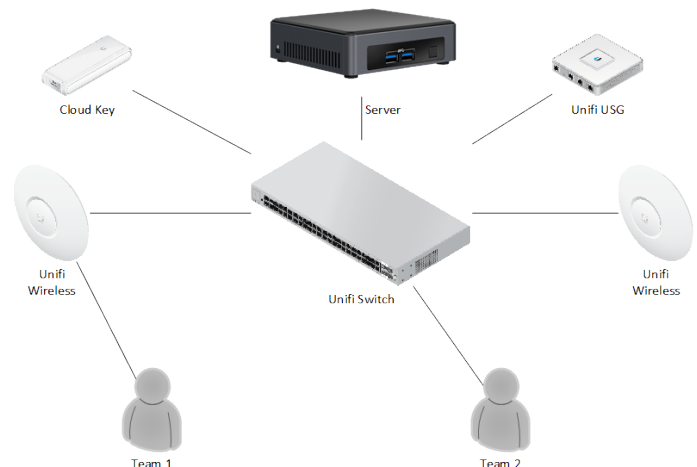
Each of the components provides a specific role in the overall network design:

USG – This acts as the Layer 3 Router, Firewall, DHCP, and Radius Server.
Cloud Key – This is the manager for the Ubiquity hardware and all network configuration changes.
Switch – This is the Layer 2 Switch that everything connects to.
Wireless – These are the wireless Access Points that wireless devices will connect to.
Server – This runs a number of services, including the API server that the teams will access. Details around this will be presented in a later blog post.

Each team is assigned a unique network and vlan via the port configuration on the switch or via Radius when connecting to the Wireless. Each vlan is only able to communicate to the server and is not able to reach the other teams. Each team will be provided unique login credentials at the start of the competition. They are encouraged to keep a copy of their work locally (as well as on the server).

This year we will be able to provide some new features with the competition and have room for growth in the future. We believe in small, successful changes. It is very important competitors provide feedback as to how this solution worked in our 2018 competition. We look forward to your feedback on these changes as well (comments are open below).

We are excited about these improvements. We hope you are as well.

# Designing the Server Environment for our Web Design Contest

by
James Anderton

We procured a server to contain all the necessary services to host the contest. Being that this is a shared environment it was decided that we would use a Linux based operating system and would then subsequently sandbox each team into a Docker container as their shell. Doing this creates an environment where each team feels like they are on their own system and have complete control over it but yet are locked in with cpu, memory, and io quotas and cannot affect their neighbors around them nor access other's data. The beauty of Linux Containers is that by default they are completely ephemeral and everything gets reset when you stop and restart the container. Following best practice, each container fulfills a single goal and has its command running as process id 1 allowing for debugging and an overall more secure implementation as unexpected services can't be started up. The way we manage to preserve the state of the user shells as well as configurations for each service is by the ability to mount volumes

from the server's filesystem to the filesystem inside of the containers. Exposing TCP or UDP network ports is done in a similar fashion as the volumes; you can designate the port inside the container that you want to expose and then give it a public port number that does not necessarily have to be the same as the one on the inside, allowing for thousands of copies of the same application to live on the same server.

The design contest environment, in order to provide the full intranet feel, comes complete with a DNS server, web server, and ftp server as well as the server hosting the API to be consumed as part of the contest requirements. Each of these services will also be containerized to securely lock them into a cpu/memory/io sandbox as well as provide the ability to quickly and effortlessly zip up the contest data and reset the server back to a pristine state to be ready for the next contest.

Below is a diagram of how the user will see the design contest network:
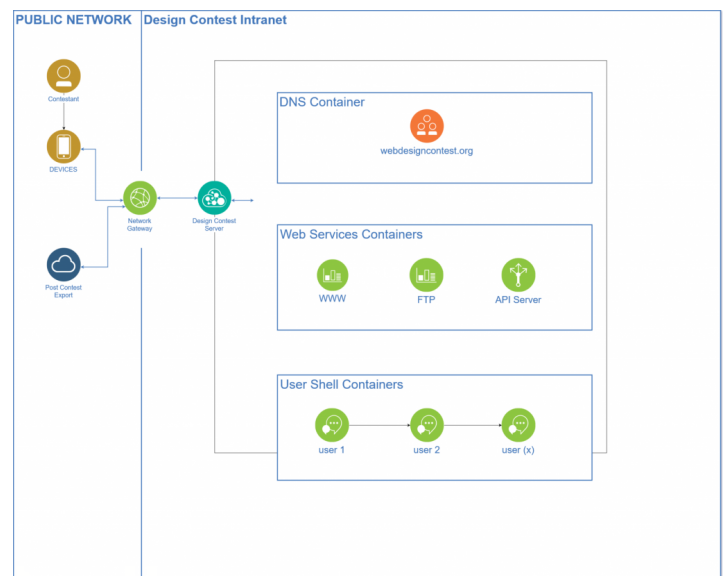
Using this new configuration, we will be able to provide some new features with the competition and have room for growth in the future. We believe in small, successful changes. It is very important competitors provide feedback as to how this solution worked in our 2018 competition.

Thoughts about Mobile

by
Irene Namer

Hello fellow Web Professional members, as the Spring season is quickly approaching I'd like to take this opportunity to share my new envisions for how many mobile applications are becoming evolved into the world of technology. Major companies are using many different methods to incorporate various enticing ways to bring incentives to new customers, for example, mobile ordering at restaurants, coupons that can be scanned at the register with a simple QR code, links for consumers to blog and hashtag new products they see in store for an opportunity to win a sweepstake, while the company's product is being blasted all over social media at the back end of this marketing technique. 2018 is a brand new year full of new diverse, creative, and strategic ways to unveil brand new, unprecedented applications into Google Play or Apple App Store for software and website developers to take advantage of marketing strategies through mobile application development to raise the tremendous fluctuated value of your client having you serve them through branding and taking measures to assure that the website you are making for them will absolutely stand out diversely.

From small businesses to large million dollar corporations, offering customer incentives is a way to get the word out about a product or service you are displaying to your audience. Many have requested minimalist to extravagant websites, either way, graphical design for a website's layout is essential to showcasing the beauty behind the display online. E-commerce is absolutely becoming stronger within the coming months, there are many clients out there looking for web designers to meet the solid demand that is rising beyond comparison. It is crucial to offer flexibility and to exceed your client's standards when they are requesting an e-commerce website.

Spring is right around the corner, and potential along with opportunities is absolutely knocking hard on the door for future triumph along the path of maintaining your success in a competitive field of technology as a valued web professional.

Seeking judges for our web design contest

We hold our national web design competition in Louisville, KY in June, 2018. Competitors have won state contests in order to compete nationally. We reinforce industry "best practices" and help competitors better understand what is needed to be successful in today's work force. We interview each team as if they were being considered for an actual web development job.

This is a significant effort and involves the work of many. We are indebted to Jonathan, Shari, Brandy, James, Steve, David, and Sam who continue to help us every year. Thank you very much for all our efforts.

We are looking for additional judges to review the work submitted by competitors (and lighten the load on our existing judges). Specifically, we would need assistance over the course of two days. All sites are uploaded to a server and judges can review these entries from anywhere. We provide a rubric and training for new judges.

If you would like to learn more about the competition (including recent comments from judges), please visit our Web Design Contest site.

If you are interested in helping judge these entries (remotely), please contact Mark DuBois (Mark@Web-Professionals.org).

GDPR – are you ready?

General Data Protection Regulation (GDPR) takes effect May 25, 2018. It applies to any organization that handles the personal information of any individual residing in the European Union. It doesn't matter where the organization is located. The privacy and security of this personal information must be maintained. Here are some of the highlights.

- Personal data must be processed in a transparent manner (and processed fairly).
- Individuals must be told what information is being collected and the purpose it is being used for.
- The purpose for any data collection must be explicit and legitimate.
- This data shall be kept no longer than required.
- The data must be accurate and up to date.
- Individuals have the right to receive a copy of their data or request it no longer be used.
- Organizations must protect this data against accidental destruction, loss, or disclosure.
- Any staff handling this personal data must be trained as to how to protect that data.

If an organization fails to comply, it may be subject to **fines up to 4% of global revenue**. Are you ready?

Here are 12 steps from the GDPR and you site.

- Become aware.
- Become accountable.
- Communicate with staff.
- Understand personal privacy rights.
- Requests for access must be dealt with in one month.
- Do you meet the legal standards of GDPR?
- Review how you seek, obtain, and record consent.
- Review how you process data dealing with children.
- Is data proteced by design and default?
- How do you report data breaches?
- Are you required to have a data protection officer?
- Do you provide a one stop shop mechanism?

Web Professionals overview

Webprofessionals.org aka World Organization of Webmasters is an all volunteer and non-profit professional association dedicated to the support of individuals and organizations that create, manage or market Web sites. The organization provides education as well as certification, technical, employment and member advantage services to thousands of aspiring and practicing Web professionals worldwide. We are always on the lookout for members who are willing to take a leadership role in our organization. We can't do all our work without you.

For more information, visit http://www.WebProfessionals.org.

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You can find us on:
Facebook - https://www.facebook.com/webprofessionals
Slack - https://4WebProfessionals.slack.com
Twitter - @WebProMinute

Pinterest - https://www.pinterest.com/webprofessionals/ We recently started a Pinterest account to provide infographics Infographics which may be helpful to practicing and aspiring web professionals.

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Colophon

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