

# **Advanced Use Case:**

# Humanitarian Aid Group Investigation

#### Scenario:

You are a freelancing human rights cybersecurity analyst. You have been contacted by a humanitarian aid group that claims they were attacked and need your help with conducting the cyber investigation. You have been given some background information and a twitter post to begin your investigation.

#### **Background:**

Venezuela is currently in the throes of a major political crisis as opposition leader and self-declared interim President Juan Guaidó is attempting to oust the incumbent President, Nicolas Maduro, who had been re-elected for a second term in a very controversial election that many are refusing to recognize as legitimate.

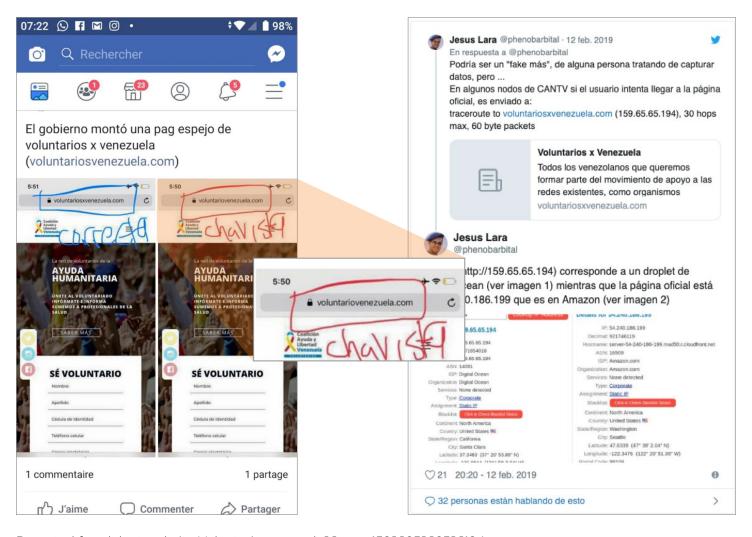
Back in February, shortly after declaring himself as interim president, Guaidó called for citizens of Venezuela to volunteer in helping international organizations deliver humanitarian aid to the country because Maduro was refusing to accept aid and blocking desperately needed supplies, food, and medicine at their borders.

A website was set up where volunteers could register to help, which required them to provide personal information such as their name, phone number, address, and whether they have things like a medical degree or a car.

This website appeared online on February 6th. Only a few days later, on February 11th, the day after the public announcement of the initiative, another almost identical website appeared with a very similar domain name and structure.

Only people inside Venezuela seemed to be affected by this attack.





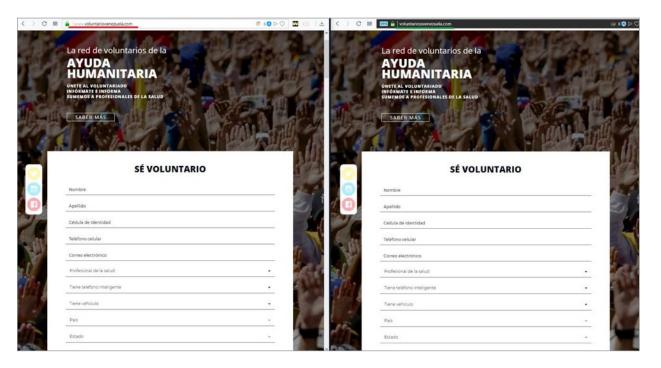
Reported fraudulent website Voluntariovenezuela[.]com, 159[.]65[.]65[.]194,

The legitimate website is www[.]voluntariosxvenezuela[.]com.

It was reported soon after that website went up that only people in Venezuela trying to visit the original website www[.]voluntariosxvenezuela[.]com was being redirected to the fake website www[.] voluntariosvenezuela[.]com via DNS spoofing.

DNS spoofing, which is a type of attack that corrupts domain name servers to redirect internet traffic from legitimate servers to malicious ones.

Below are screenshots from the two websites. The one that is underlined in red is the reported fraudulent website.



#### Goal:

Your goal is to investigate both websites from back in February 2019 and determine the following and provide your evidence:

- 1. Is www[.]voluntariovenezuela[.]com fraudulent?
- 2. Are any other websites also infringing on the real website www[.]voluntariosxvenezuela[.]com?
- 3. Can you determine or infer who is behind this domain infringing DNS poison attack?
- 4. Are there any other websites that the threat actor is currently using or has used in attacks?
- 5. What are some ways people can protect against DNS spoofing?

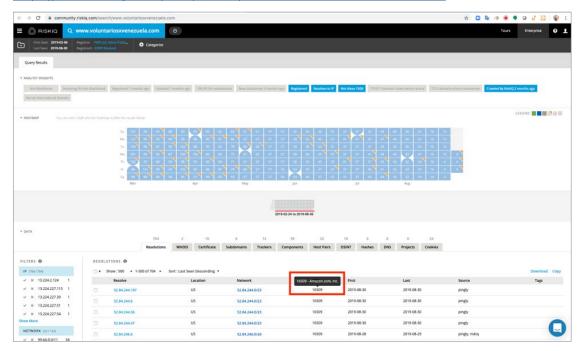
#### Search:

**Fist Search:** Perform a search for www[.]voluntariosxvenezuela[.]com https://community.riskig.com/search/www.voluntariosxvenezuela.com

**Second Search:** Perform a search for www[.]voluntariovenezuela[.]com https://community.riskiq.com/search/www.voluntariovenezuela.com

### **Step 1:** search for www[.]voluntariosxvenezuela[.]com

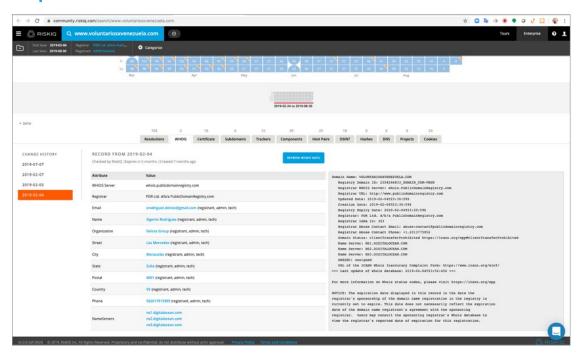
https://community.riskig.com/search/www.voluntariosxvenezuela.com



Determine the characteristics of the real website www[.]voluntariosxvenezuela[.]com

From the resolutions tab, we can see the IP addresses are from Amazon.com, Inc. according to the ASN number based in the United States.

Step 2: Click on the WHOIS tab

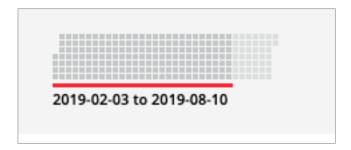


In the change history section on the left side of the screen click on the earliest date.

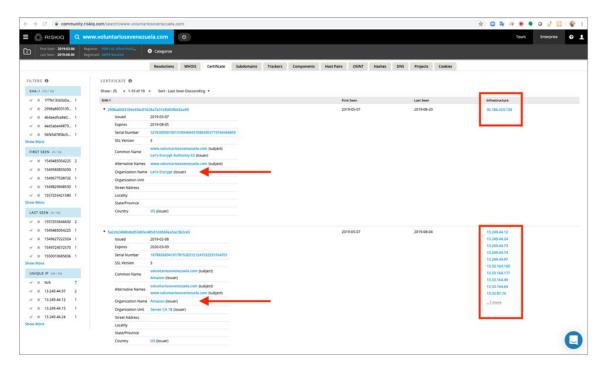
The WHOIS information shows the website was originally registered to Delcos Group in the city of Maracaibo in Venezuela. The registrant is Sigerist Rodriguez.

### Step 3: Click on the Certificate tab

In order to see the results that occurred back in February, you will need to use the timebar. Click on the far left side of the timebar.

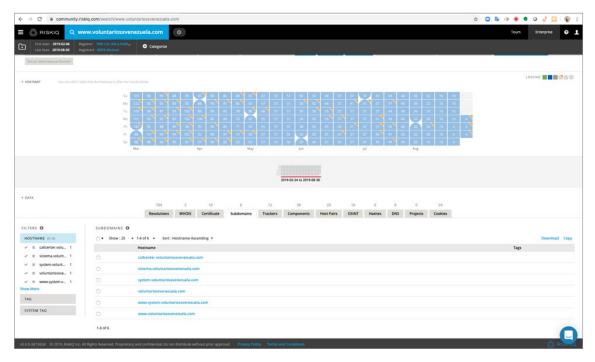


The results will now refresh and display six months of data starting on February 3, 2019.



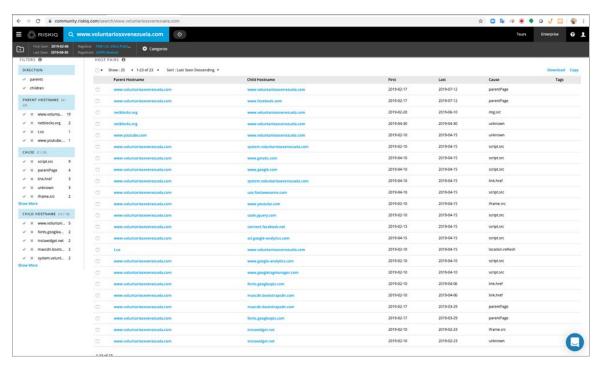
Certificates are a combination of paid Amazon and Let's Encrypt free certificates. The DNS spoofing could have tainted the results because the domain was redirecting to fraudulent infrastructure. Until the other domain has been examined, we will not be able to conclusively determine if the real domain also had free Let's Encrypt SSL certificates.





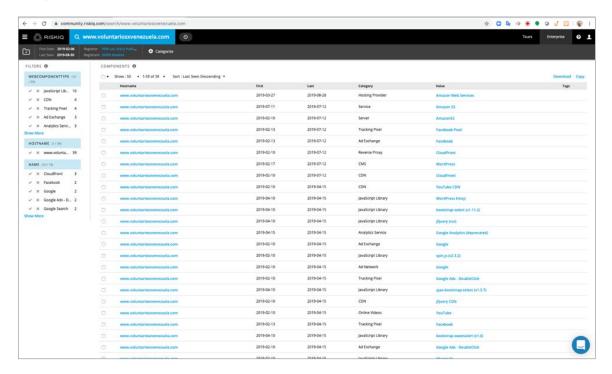
Subdomains are not showing anything unusual and are all part of the same domain voluntariosxvenexuela[.]com

## Step 5: Click on the Hoist Pairs tab



The Host Pairs tab does not show any current or past relationship with content going to or coming from the fraudulent website under investigation. Sometimes threat actors will create their website, and have it pull content directly from the real website. In this particular case, we do not see any of that type of activity on www[.] voluntariosxvenexuela[.]com.

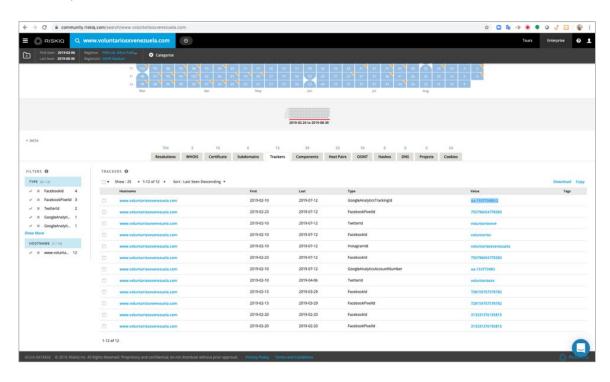
### Step 6: Click on the Components tab



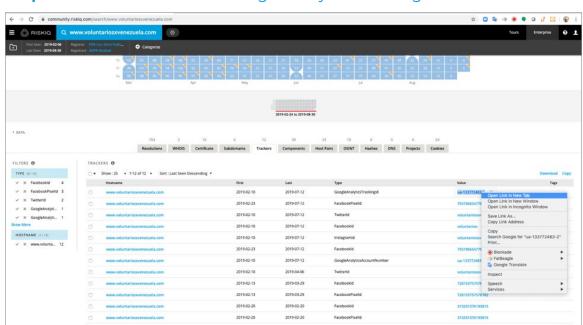
None of the components appear to be associated with malicious activity.

# Step 7: Click on the Trackers tab

Now we want to examine the tracker and cookies from www[.]voluntariosxvenexuela[.]com to see if the threat actor duplicated the real website's cookies and trackers into the fraudulent website.



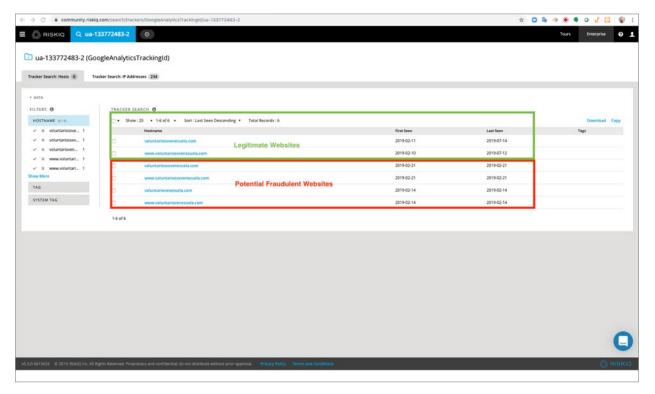
Here we see a list of trackers used to track user experience on the website. We will now pivot search on the first value for the GoogleAnalyticsTrackingId ua-133772483-2.



# Step 8: Pivot search on the GoogleAnalyticsTrackingId value ua-133772483-2

Right-click on ua-133772483-2 and open it in a new tab.

The URL should be <a href="https://community.riskiq.com/search/trackers/GoogleAnalyticsTrackingId/ua-133772483-2">https://community.riskiq.com/search/trackers/GoogleAnalyticsTrackingId/ua-133772483-2</a> We now see some interesting results.

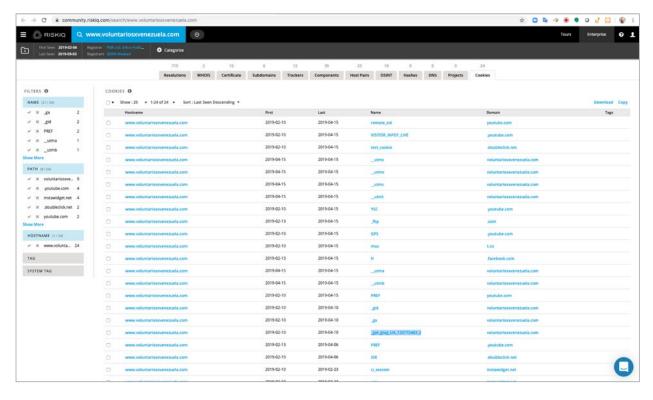


voluntariosxvenexuela[.]com and www[.]voluntariosxvenexuela[.]com is using Google Analytics Tracking Id as expected. But four different websites now appear to be using the same Google Analytics tracking id.

 $voluntarios xxvenzuela [.] com, \ www [.] voluntarios xxvenzuela [.] com, \ voluntariovenezuela [.] com, \ www. \ voluntariovenezuela [.] com$ 

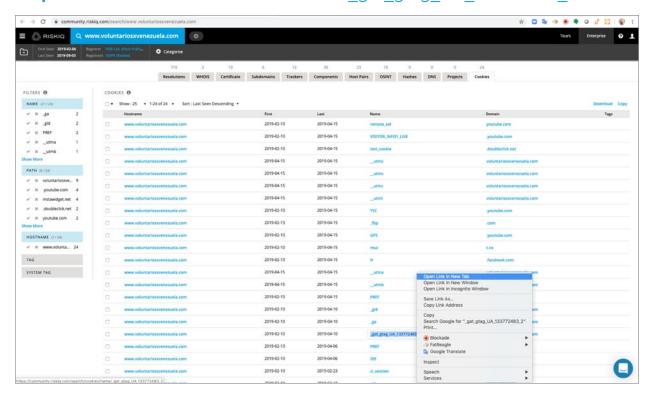
# **Step 9:** Now go back to the previous tab for www[.]voluntariosxvenezuela[.]com and click on the cookies tab

https://community.riskiq.com/search/www.voluntariosxvenezuela.com



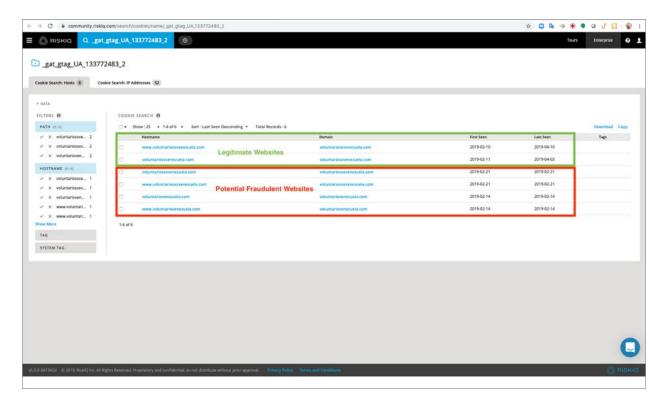
Here we see just one cookie name that appears to be unique associated with legitimate domain voluntariosxvenezuela[.]com.

Step 10: Pivot search on the cookie name \_gat\_gtag\_UA\_133772483\_2



Right-click on the cookie name \_gat\_gtag\_UA\_133772483\_2 and open the link in a new tab.

https://community.riskiq.com/search/cookies/name/ gat gtag UA 133772483 2



Now we see the two hosts using a cookie from the legitimate domain voluntariosxvenezuela.com (in green). We also see four different hostnames pointing to two different potential fraudulent domains. voluntariosxxvenzuela[.] com, www[.]voluntariosxxvenzuela[.]com, voluntariovenezuela[.]com, and <a href="https://www.voluntariovenezuela[.]com">www.voluntariovenezuela[.]com</a>. These are the same domains that were also using the legitimate domain's Google Analytics Tracking Id.

### Step 11: Investigating the domains utilizing web crawl data

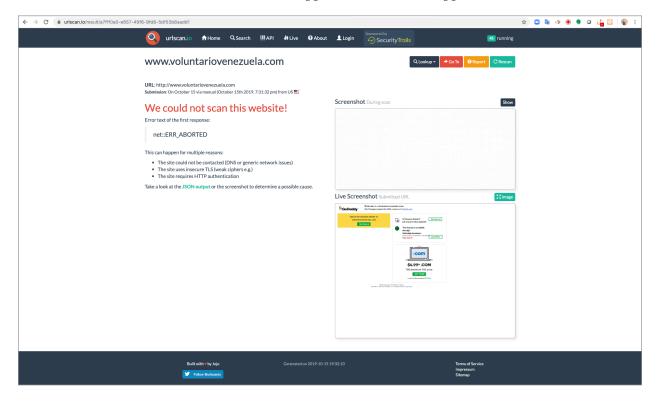
Now we will examine the legitimate and potential fraudulent domains to see how the websites appear now and back in February 2019.

It is important not to directly visit the websites you are investigating. The websites might contain malware, or the threat actors could be monitoring who is visiting the website. Also, the threat actor might be filtering traffic, to block traffic from the attacked domain or it could look different from the organization.

The attack happened back in February 2019 so the websites might not be up anymore. We will now do a web crawl of one of the fraudulent domains.

#### In a new tab go to https://urlscan.io

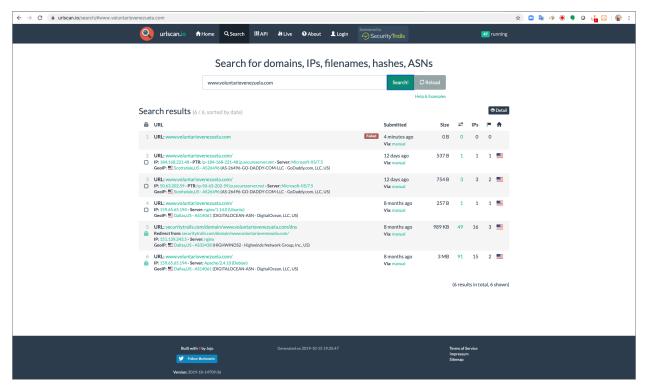
In the search field search for the domain www[.]voluntariovenezuela[.]com



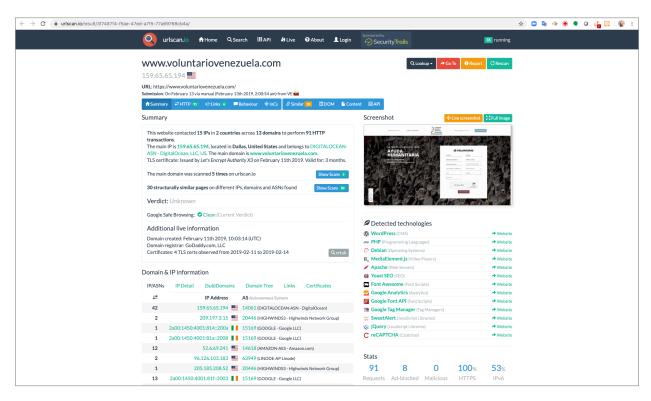
This website does not seem to be infringing at this time. Now let us search for any results in the base back in February 2019.

# **Step 12:** Using urlscan.io look for any previous crawls for the domain www[.] voluntariovenezuela[.]com

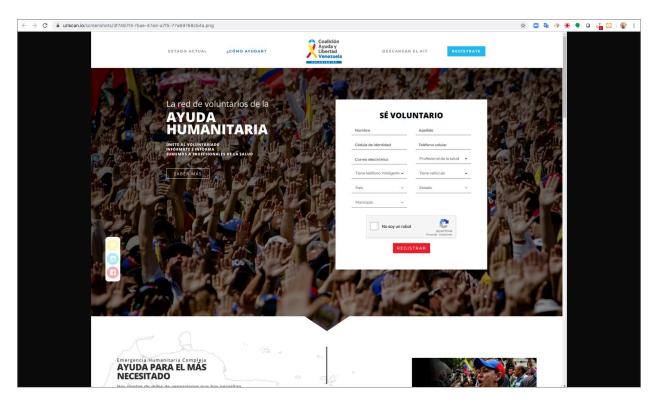
Click on search in the title bar and search for www[.]voluntariovenezuela[.]com



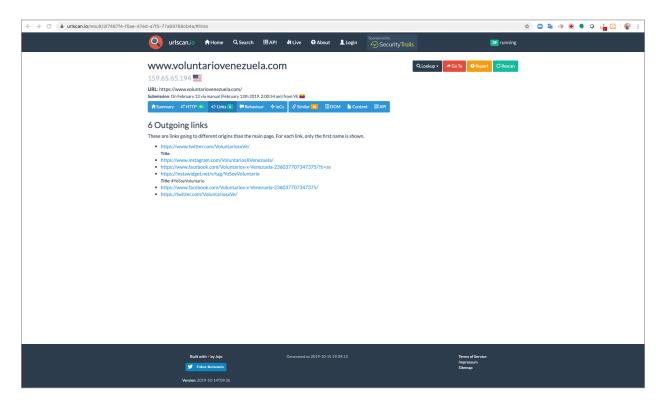
Click on the last result about 8 months ago.



Here we see that the domain www[.]voluntariovenezuela[.]com was infringing on the real domain www[.] voluntariosxvenezuela[.]com.



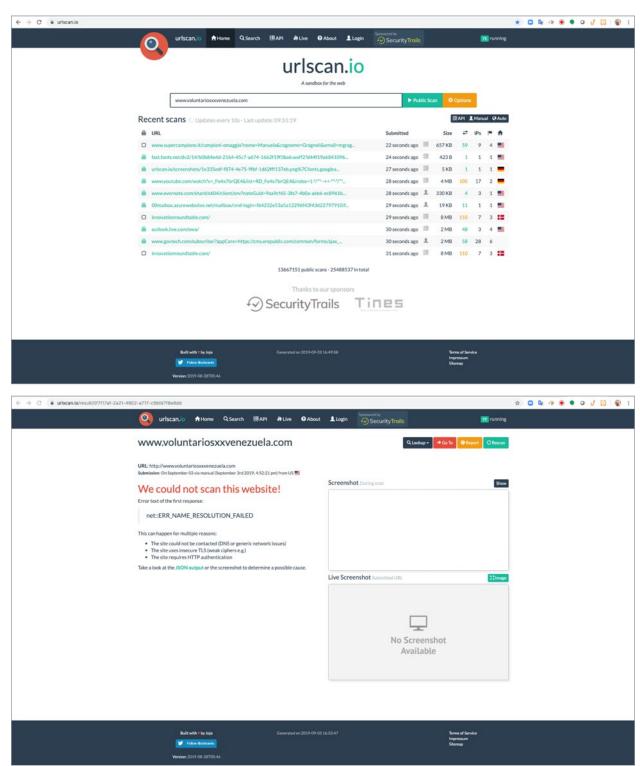
If you click on the Links section.



You can see that the fake www[.]voluntarovenzuela[.]com domain is linking to the real domain voluntariosxvenezuela twitter, instragram, and facebook accounts.

### Step 13: Using urlscan.io for the domain www[.]voluntariosxxvenezuela[.]com

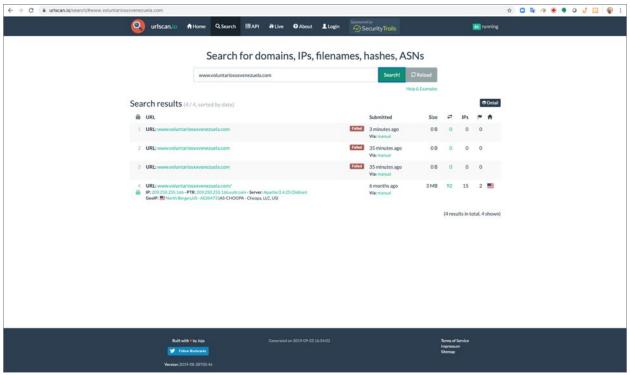
Do a public scan for www[.]voluntariosxxvenezuela[.]com



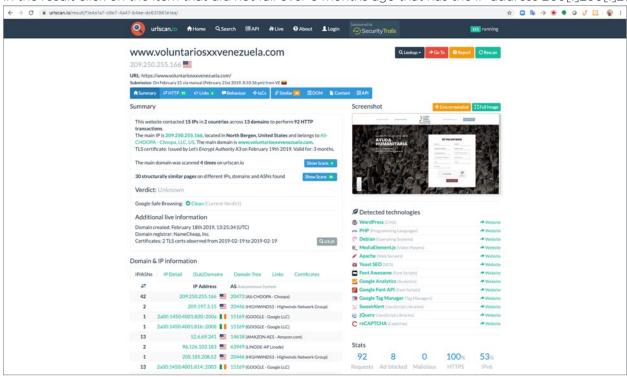
The results come back as failed.

# **Step 14:** Using urlscan.io look for any previous crawls for the domain www[.] voluntariosxxvenezuela[.]com (potential fraudulent domain)

Click on search in the title bar and search for www[.]voluntariosxxvenezuela[.]com



In the result click on the item that did not fail over 6 months ago that has the IP address 209[.]250[.]255[.]166.

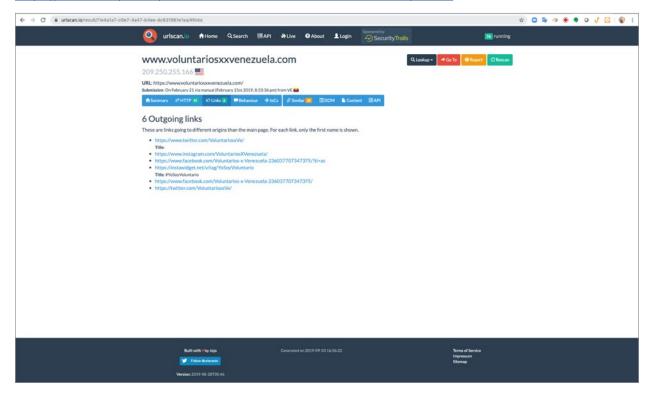


https://urlscan.io/result/f1e4a1a7-c9e7-4a47-b4ee-dc631961e1ea/

Now we see results from a previous web crawl during the time in question. We can also see a screenshot of the website and all of the information that was captured during that scan. This domain in the past appeared to have infringed against the legitimate domain.

### Step 15: Click on the links tab.

https://urlscan.io/result/f1e4a1a7-c9e7-4a47-b4ee-dc631961e1ea/#links

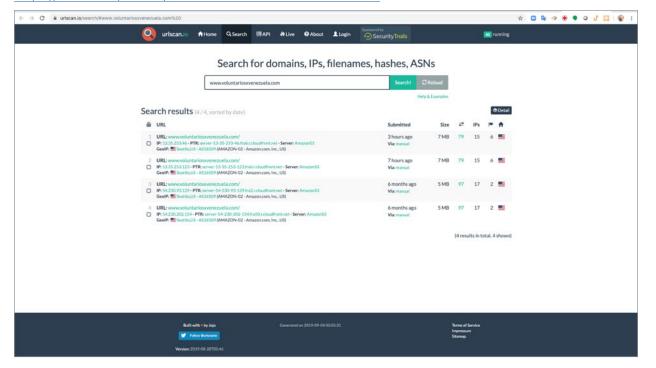


Here we see that this potential fraudulent domain is linking to the legitimate Twitter, Instagram, and Facebook accounts. This information was gathered when urlscan.io previously visited the domain.

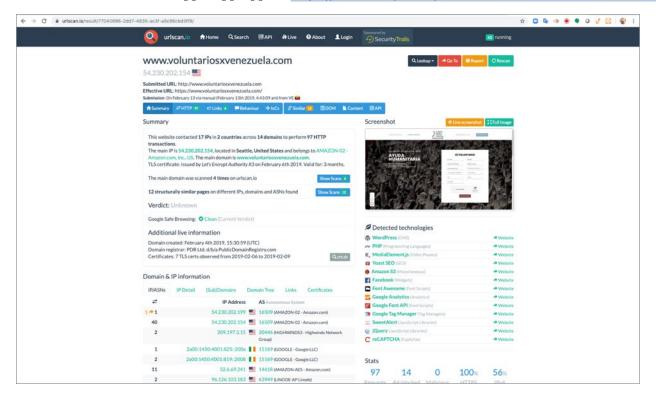
# **Step 16:** In urlscan.io search for previous results for the legitimate domain www[.] voluntariosxvenezuela[.]com

Click on search in the title bar and search for www[.]voluntariosxvenezuela[.]com

https://urlscan.io/search/#www.voluntariosxvenezuela.com



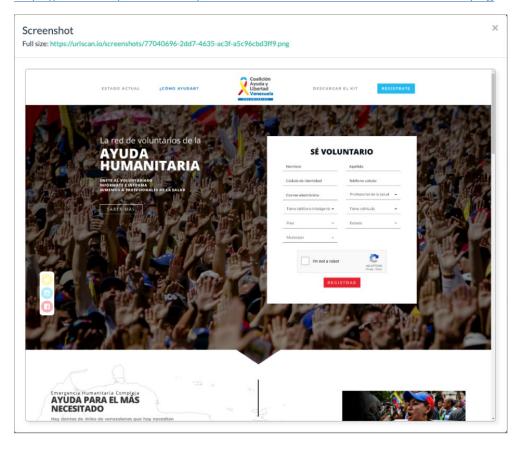




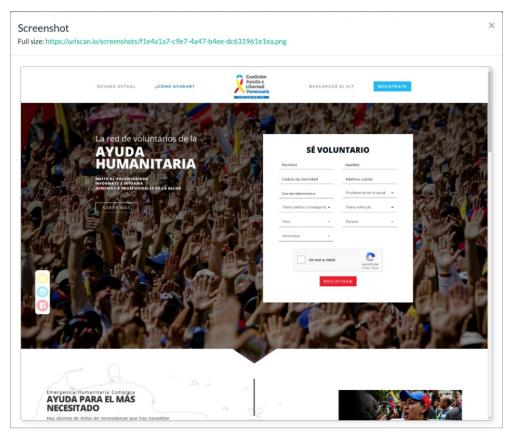
The legitimate and fraudulent domain screenshots appear to be identical.

Legitimate domain www[.]voluntariosxvenezuela[.]com

https://urlscan.io/screenshots/77040696-2dd7-4635-ac3f-a5c96cbd3ff9.png



Potential fraudulent domain www[.]voluntariosxxvenezuela[.]com <a href="https://urlscan.io/screenshots/fle4a1a7-c9e7-4a47-b4ee-dc631961e1ea.png">https://urlscan.io/screenshots/fle4a1a7-c9e7-4a47-b4ee-dc631961e1ea.png</a>



Now that we have determined that the potential fraudulent domain is using cookies and trackers from the real domain and appears to have an identical screenshot, we will now investigate it in PassiveTotal.

The website www[.]voluntariovenezuela[.]com was infringing on the real domain and the video showed that the DNS cache redirected ther real domain to this infringing domain. This could happen because of DNS spoofing was reported and we observed it in the video .

#### According to Wikipedia

https://en.wikipedia.org/wiki/DNS\_spoofing

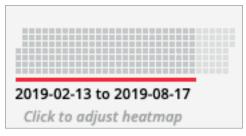
DNS spoofing, also referred to as DNS cache poisoning, is a form of computer security hacking in which corrupt Domain Name System data is introduced into the DNS resolver's cache, causing the name server to return an incorrect result record, e.g. an IP address. This results in traffic being diverted to the attacker's computer (or any other computer).

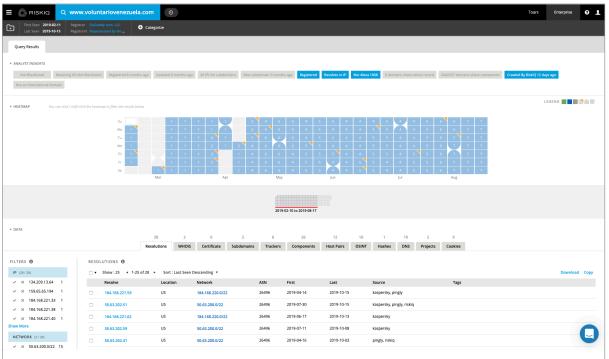
That means if a person was in Venezuela and using the DNS servers in Venezuela a poison cache entry could be entered in and force users to be redirected to a fraudulent IP address. So, if the DNS server entry for www[.] voluntariosxvenezuela[.]com was changed to point to a different IP address in the cache then all users typing in that real domain would do a lookup of the IP address in the DNS server. The DNS server would respond with the cached entry which could have been poisoned with a back IP address. This appears to be what happened from the twitter posts we were given.

# **Step 17:** Open a new tab and go the website https://community.riskiq.com and search for the domain www[.]voluntariovenezuela[.]com

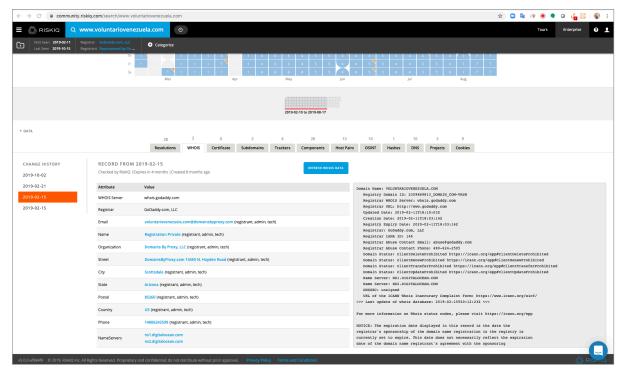
#### https://community.riskiq.com/search/www.voluntariovenezuela.com

Adjust the heatmap by clicking on the beginning of the timebar in order to filter the results to show you the beginning of February 2019. The heatmap only shows 6 months of results at a time. Since we are investigating an attack that is a little over 6 months, we have to click on the beginning of the timebar to see the results we are looking for.





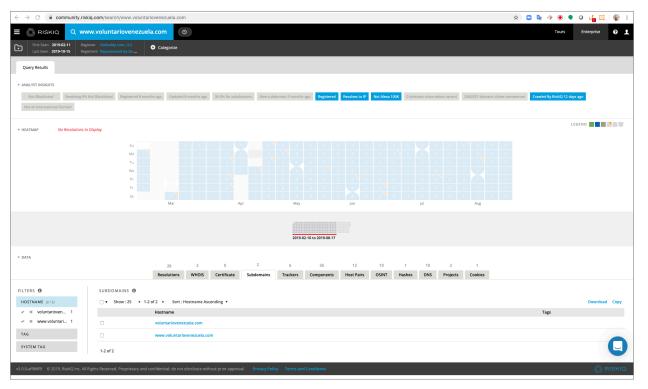


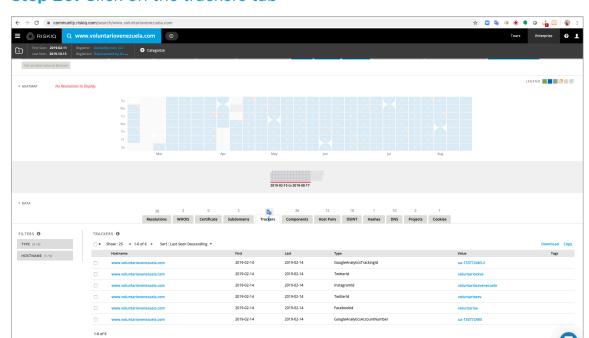


The WHOIS information is privacy protected. No further avenues of investigation.

### Step 19: Click on the subdomain tab

We only see two results for the domain. We will move on and come back to the subdomains if we need to further investigate them.



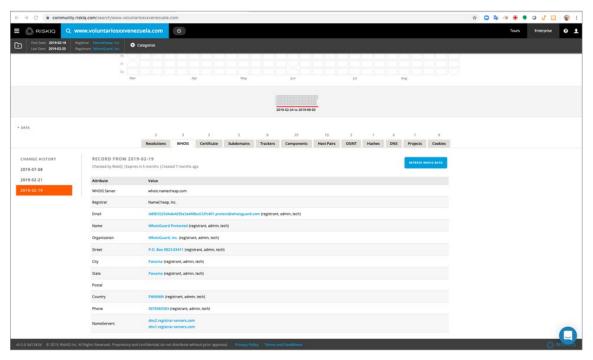


### Step 20: Click on the trackers tab

The results show that the domain is utilizing all of the trackers from real domain www[.]voluntariosxvenezuela[.] com (Google, Twitter, Instagram, and Facebook). We witnessed in the twitter video the DNS poison attack redirection only within Venezuela. We need to find out more information about the IP address that the website was utilizing during this attack.

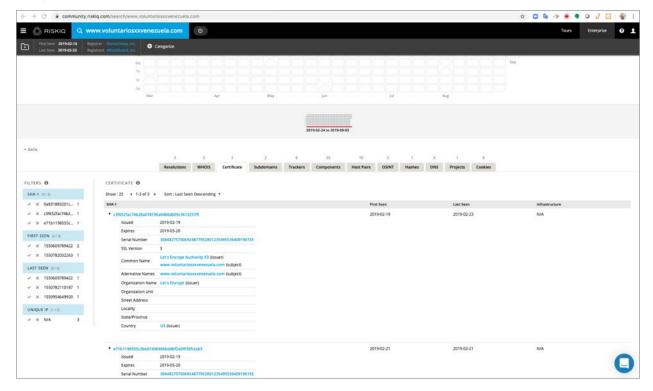
# **Step 21:** Open a new tab to https://community.riskiq.com and search for the domain www[.]voluntariosxxvenezuela[.]com

https://community.riskiq.com/search/www.voluntariosxxvenezuela.com



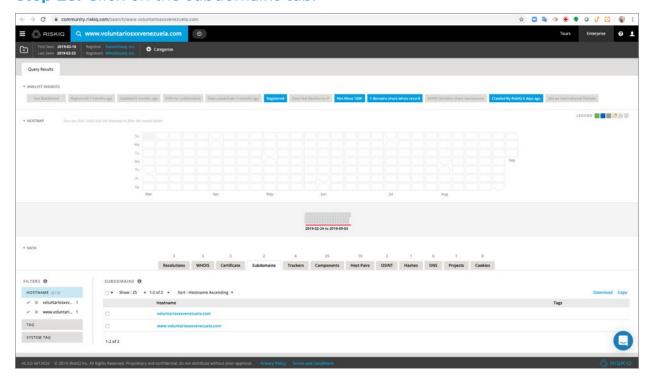
The WHOIS information is privacy protected.

#### **Step 22:** Click on the Certificate tab.



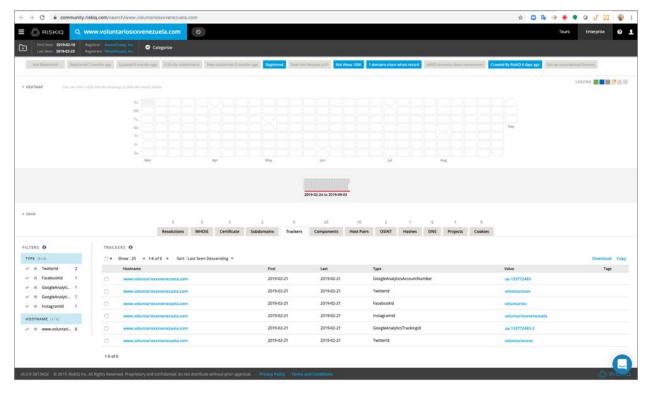
In the results, if you expand the certificate information you can see that all of the certificates were free Let's Encrypt certificates. This can sometimes be an indicator of a fraudulent domain. Threat actors usually don't like to spend money of infrastructure or certificates.

### Step 23: Click on the subdomains tab.



We see that there is a subdomain for www[.]voluntariosxxvenezuela[.]com and voluntariosxxvenezuela[.]com.

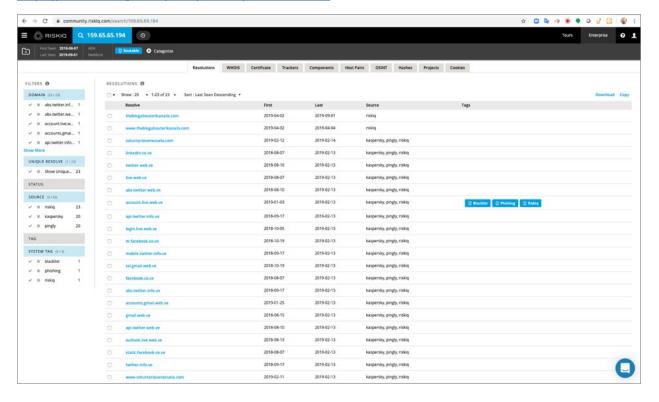




We see the google analytics tracking ID, twitter, Facebook and Instagram ids from the legitimate domain vountariosxvenezuela[.]com

**Step 25:** In a new tab we will now investigate the IP address 159[.]65[.]194 that appeared in the twitter post.

https://community.riskig.com/search/159.65.65.194

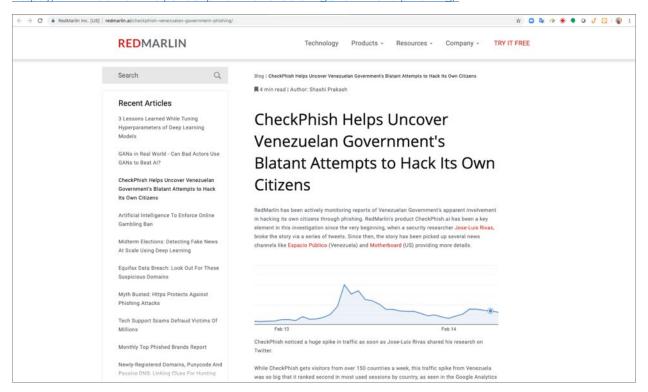


If you examine the list of domains. We see many popular domains LinkedIn, Twitter, Microsoft login account[.]live, Facebook, Outlook, Gmail. But all of the domains end in .ve. That means that these domains are controlled by the TLD for the Venezuelan government. The fraudulent domain voluntariovenezuela[.]com also appears. All of these domains seem to have end all around the same time when the attack stopped on February 13, 2019.

### Step 26: Click on the OSINT tab.

Click on the link for the source www[.]redmarlin.ai

https://www.redmarlin.ai/checkphish-venezuelan-government-phishing/



This OSINT article describes how the Venezuelan Government attempted to hack its own citizens.

#### Conclusion:

- 1. Is www[.]voluntariovenezuela[.]com fraudulent?

  Yes, we determined that www[.]voluntariovenezuela[.]com is fraudulent and was infringing on the legitimate domain. Utilizing urlscan.io we could saw the fraudulent domain had the same webpage as the legitimate domain. PassiveTotal exposed www[.]voluntariovenezuela[.]com was utilizing the same trackers and cookies from the legitimate domain www[.]voluntariosxvenzuela[.]com. Which meant it was copied from the legitimate domain. Redirections were seen only within Venezuela as demonstrated from the video posted to twitter. Use of a different DNS server not controlled by the TLD .ve worked correctly. This demonstrated that DNS poisoning occurred. The poisoned DNS cache pointed users within Venezuela to the fraudulent domain www[.] voluntariovenezuela[.]com at IP address 159[.]65[.]194. This IP address hosted other domains that were solely controlled by the TLD .ve.
- 2. Are any other websites also infringing on the real website www[.]voluntariosxvenezuela[.]com

  Yes, www[.]voluntariosxxvenezuela[.]com, voluntariosxxvenezuela[.]com, www[.]voluntariovenezuela[.]com,
  voluntariovenezuela[.] were also infringing on the legitimate website.
- 3. Can you determine or infer who is behind this domain infringing DNS poison attack? Since the TLD was controlled by the Venezuelan government we can highly speculate that the attack was carried out by them. Many OSINT reports concluded they were responsible for the attack against their Citizens
- 4. Are there any other websites that the threat actor is currently using or has used in attacks? Below is a list of the domains that were used in the attack in February 2019. Each one could be investigated to get the full understanding of the attack.

theblogabouterikanails[.]com www[.]theblogabouterikanails[.]com

#### voluntariovenezuela[.]com

linkedin[.]co[.]ve
twitter[.]web[.]ve
live[.]web[.]ve
abs[.]twitter[.]web[.]ve
account[.]live[.]web[.]ve
api[.]twitter[.]info[.]ve
login[.]live[.]web[.]ve
m[.]facebook[.]co[.]ve
mobile[.]twitter[.]info[.]ve

ssl[.]gmail[.]web[.]ve
facebook[.]co[.]ve
abs[.]twitter[.]info[.]ve
accounts[.]gmail[.]web[.]ve
gmail[.]web[.]ve
api[.]twitter[.]web[.]ve
outlook[.]live[.]web[.]ve
static[.]facebook[.]co[.]ve
twitter[.]info[.]ve

www[.]voluntariovenezuela[.]com
mobile[.]twitter[.]web[.]ve

5. What are some ways people can to do to be protect against DNS spoofing?

If users manually set their DNS server to a known good DNS server this could prevent DNS poison attacks. For example, you could set your DNS servers to Google's DNS servers 8[.]8[.]8[.]8[.]8 and 8[.]4[.]4



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