# Vhost Fuzzing

As we saw in the previous section, we were able to fuzz public sub-domains using public DNS records. However, when it came to fuzzing sub-domains that do not have a public DNS record or sub-domains under websites that are not public, we could not use the same method. In this section, we will learn how to do that with `Vhost Fuzzing`.

## Vhosts vs. Sub-domains

The key difference between VHosts and sub-domains is that a VHost is basically a 'sub-domain' served on the same server and has the same IP, such that a single IP could be serving two or more different websites.

`VHosts may or may not have public DNS records.`

In many cases, many websites would actually have sub-domains that are not public and will not publish them in public DNS records, and hence if we visit them in a browser, we would fail to connect, as the public DNS would not know their IP. Once again, if we use the `sub-domain fuzzing`, we would only be able to identify public sub-domains but will not identify any sub-domains that are not public.

This is where we utilize `VHosts Fuzzing` on an IP we already have. We will run a scan and test for scans on the same IP, and then we will be able to identify both public and non-public sub-domains and VHosts.

## Vhosts Fuzzing

To scan for VHosts, without manually adding the entire wordlist to our `/etc/hosts`, we will be fuzzing HTTP headers, specifically the `Host:` header. To do that, we can use the `-H` flag to specify a header and will use the `FUZZ` keyword within it, as follows:

```
MichaelLuka@htb[/htb]$ ffuf -w /opt/useful/SecLists/Discovery/DNS/subdomains-top1million-5000.txt:FUZZ -u http://academy.h


        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
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          \/_/    \/_/   \/___/    \/_/

       v1.1.0-git
________________________________________________

 :: Method           : GET
 :: URL              : http://academy.htb:PORT/
 :: Wordlist         : FUZZ: /opt/useful/SecLists/Discovery/DNS/subdomains-top1million-5000.txt
 :: Header           : Host: FUZZ
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 40
 :: Matcher          : Response status: 200,204,301,302,307,401,403
________________________________________________

mail2                   [Status: 200, Size: 900, Words: 423, Lines: 56]
dns2                    [Status: 200, Size: 900, Words: 423, Lines: 56]
ns3                     [Status: 200, Size: 900, Words: 423, Lines: 56]
dns1                    [Status: 200, Size: 900, Words: 423, Lines: 56]
lists                   [Status: 200, Size: 900, Words: 423, Lines: 56]
webmail                 [Status: 200, Size: 900, Words: 423, Lines: 56]
static                  [Status: 200, Size: 900, Words: 423, Lines: 56]
web                     [Status: 200, Size: 900, Words: 423, Lines: 56]
www1                    [Status: 200, Size: 900, Words: 423, Lines: 56]
<...SNIP...>
```

We see that all words in the wordlist are returning `200 OK`! This is expected, as we are simply changing the header while visiting `http://academy.htb:PORT/`. So, we know that we will always get `200 OK`. However, if the VHost does exist and we send a correct one in the header, we should get a different response size, as in that case, we would be getting the page from that VHosts, which is likely to show a different page.

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OFFLINE

Start Instance

1 / 1 spawns left