DNS

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Apple Private Relay on pihole

if your Apple device has a DNS issue, but the DNS queries are not showing in the pihole logs you should see something along the lines of `mask.icloud.com` and `mask-h2.icloud.com` being blocked as Blocked (Special Domain) nxdomain. This appears to be a problem with Apple Private Relay, which can happen even when this is disabled. Below are the steps to resolve the issue.

Open the pihole server and edit `/etc/pihole/pihole-FTL.conf` in a text editor of your choice

add the line `BLOCK_ICLOUD_PR=false`

Save the file and reboot the hardware

After reboot Apple device DNS queries should begin to show properly in the pihole, and the PR `mask.icloud.com` and `mask-h2.icloud.com` domains should no longer be visible.

Blocking External Client DNS Queries

Blocking External Client DNS Queries

This procedure configures the firewall to block DNS requests from local clients to servers outside the local network. With no other accessible DNS servers, clients are forced to send DNS requests to the DNS Resolver or DNS Forwarder on pfSense® software for resolution.

Note

Blocking is effective but does not gracefully handle the situation. Clients must manually adjust their configuration to use the firewall for DNS. Redirecting DNS requests to the firewall is a more seamless solution. See Redirecting Client DNS Requests for details.

- Navigate to **Firewall > Rules**, **LAN** tab
- Create the block rule as the first rule in the list:
  - Click fa-level-up **Add** to create a new rule at the top of the list
  - Fill in the following fields on the rule:

    Action
    : *Reject*

    Interface
    : *LAN*

    Protocol
    : *TCP/UDP*

    Destination
    : *Any*

    Destination Port Range
    : *DNS (53)*

    Description
    : Block DNS to Everything Else
- Create the pass rule to allow DNS to the firewall, above the block rule:
  - Click fa-level-up **Add** to create a new rule at the top of the list
  - Fill in the following fields on the rule:

Action
Pass
Interface
LAN
Protocol
TCP/UDP
Destination
LAN Address
Destination Port Range
DNS (53)
Description
`Pass DNS to the Firewall`

- Click fa-check **Apply Changes** to reload the ruleset

When complete, there will be two rule entries that look like the following picture:

./_images/blockdns.png

Certain local PCs could be allowed to use other DNS servers by placing a pass rule for them above the block rule.

DNS over TLS

Another concern is that clients could use DNS over TLS to resolve hosts. DNS over TLS sends DNS requests over an encrypted channel on an alternate port, `853`.

This traffic can be blocked with a firewall rule for port `853` using the same procedure used for `53`. Though if the firewall will not be providing DNS over TLS service to clients, do not add the pass rule.

DNS over HTTPS

Similar to DNS over TLS, clients may also use DNS over HTTPS (DoH). This is harder to block as it uses port `443`. Blocking port `443` on common public DNS servers may help (e.g. `1.1.1.1`, `8.8.8.8`).

Some browsers automatically attempt to use DNS over HTTPS because they believe it to be more secure and better for privacy, though that is not always the case. Each browser may have its own methods of disabling this feature. Firefox uses a “canary” domain `use-application-dns.net` by default. If Firefox cannot resolve this name, Firefox disables DNS over HTTPS.

To prevent Firefox from using DNS over HTTPS, add the following to the DNS Resolver custom options:

```
server:
local-zone: "use-application-dns.net" always_nxdomain
```

Pi-Hole

Pi-Hole is a DNS server that has built in ability to block queries. It does this by returning 0.0.0.0 for queries on the block list.

Pi-Hole Home Page

For installation instructions

List of Commands
Change password: sudo pihole -a -p Pi-Hole v6 updated command to `sudo pihole setpassword` Update: pihole -up

Redirecting Client DNS Requests

Redirecting Client DNS Requests

Before you begin: Network level DNS must be set to use the pFsense firewall or DNS queries will fail. Attempting to redirect all DNS queries to your own DNS server, only to try and then send them off to Google or Cloudflared will fail.

To restrict client DNS to only the DNS Resolver or Forwarder on pfSense® software, use a port forward to capture all client DNS requests.

Note

Either The DNS Resolver or DNS Forwarder must be active and it must bind to and answer queries on *Localhost*, or *All* interfaces.

See also

- Blocking External Client DNS Queries
- Blocking Web Sites Using DNS

The following example uses the LAN interface but the same technique will work with any local interface.

- Navigate to **Firewall > NAT**, **Port Forward** tab
- Click fa-level-up **Add** to create a new rule
- Fill in the following fields on the port forward rule:
  Interface
  LAN
  Protocol
  TCP/UDP
  Destination
  Invert Match *checked*, *LAN Address*

Destination Port Range
DNS (53)
Redirect Target IP
`127.0.0.1`
Redirect Target Port
DNS (53)
Description
`Redirect DNS`
NAT Reflection
Disable

When complete, the port forward must appear as follows:

Note

If DNS requests to other DNS servers are blocked, such as by following Blocking External Client DNS Queries, ensure the rule to pass DNS to `127.0.0.1` is above any rule that blocks DNS.

With this port forward in place, DNS requests from local clients to **any** external IP address will result in the query being answered by the firewall itself. Access to other DNS servers on port 53 is impossible.

Tip

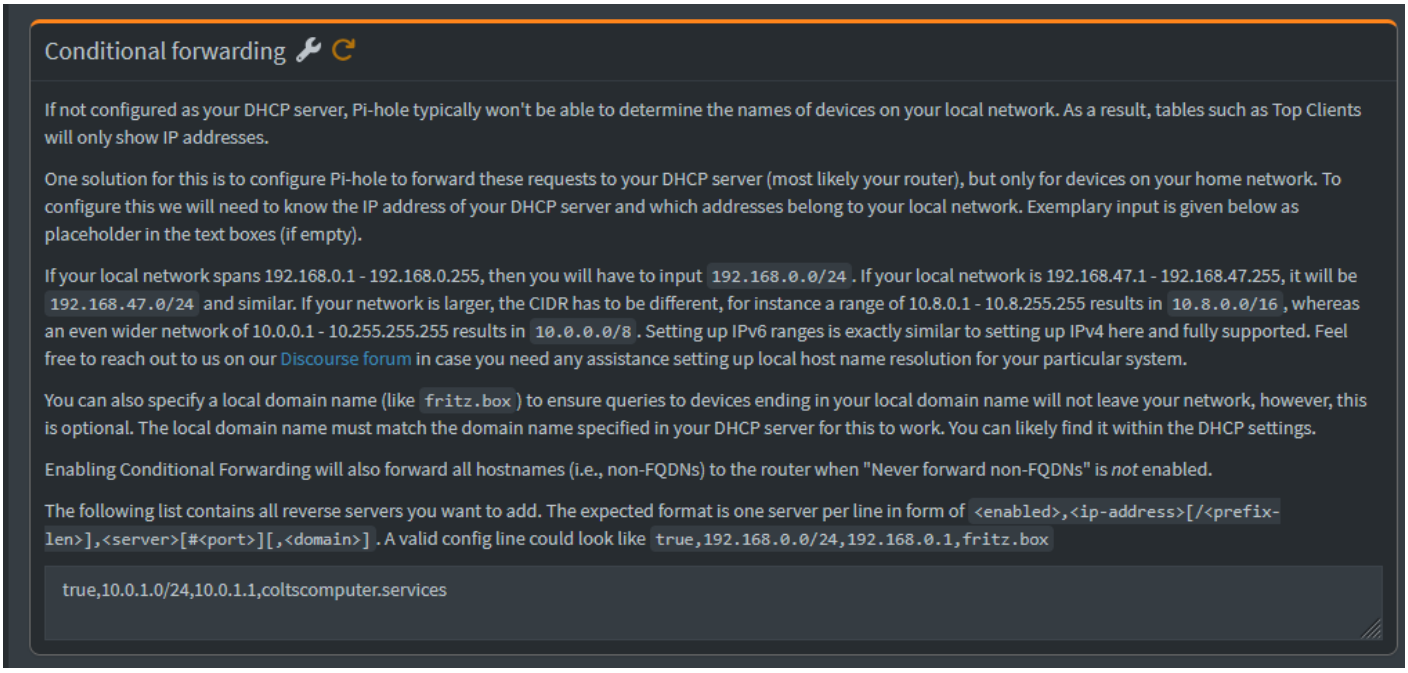
This can be adapted to allow access to only a specific set of DNS servers by changing the Destination network from “LAN Address” to an alias containing the allowed DNS servers. The **Invert match** box should remain checked.

Warning

Clients using DNS over TLS or DNS over HTTPS could circumvent this protection. Redirecting or blocking port `853` may help with DNS over TLS, depending on the clients.

See Blocking External Client DNS Queries for additional advice.

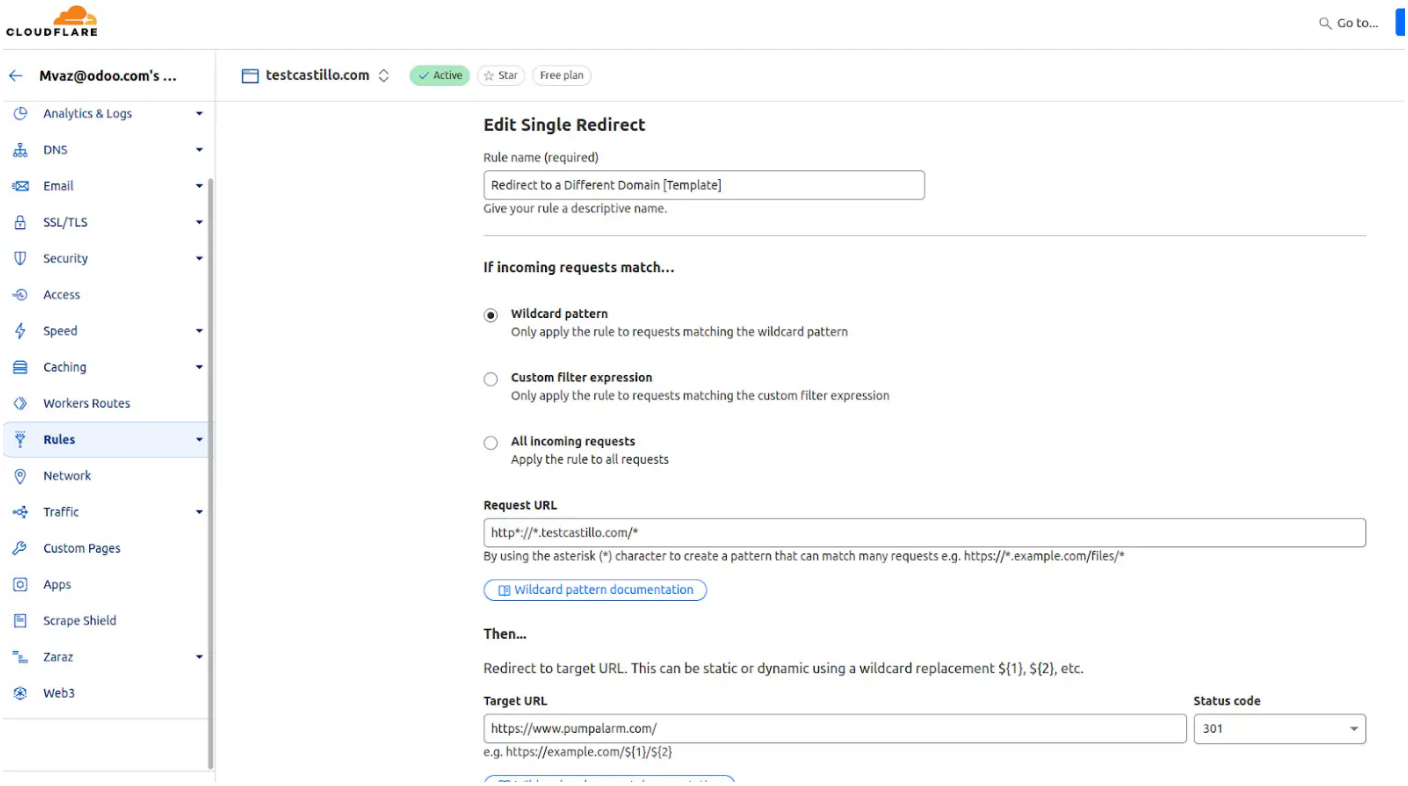
Configure Conditional Forwarder on PiHole



Enter one entry per line like the above

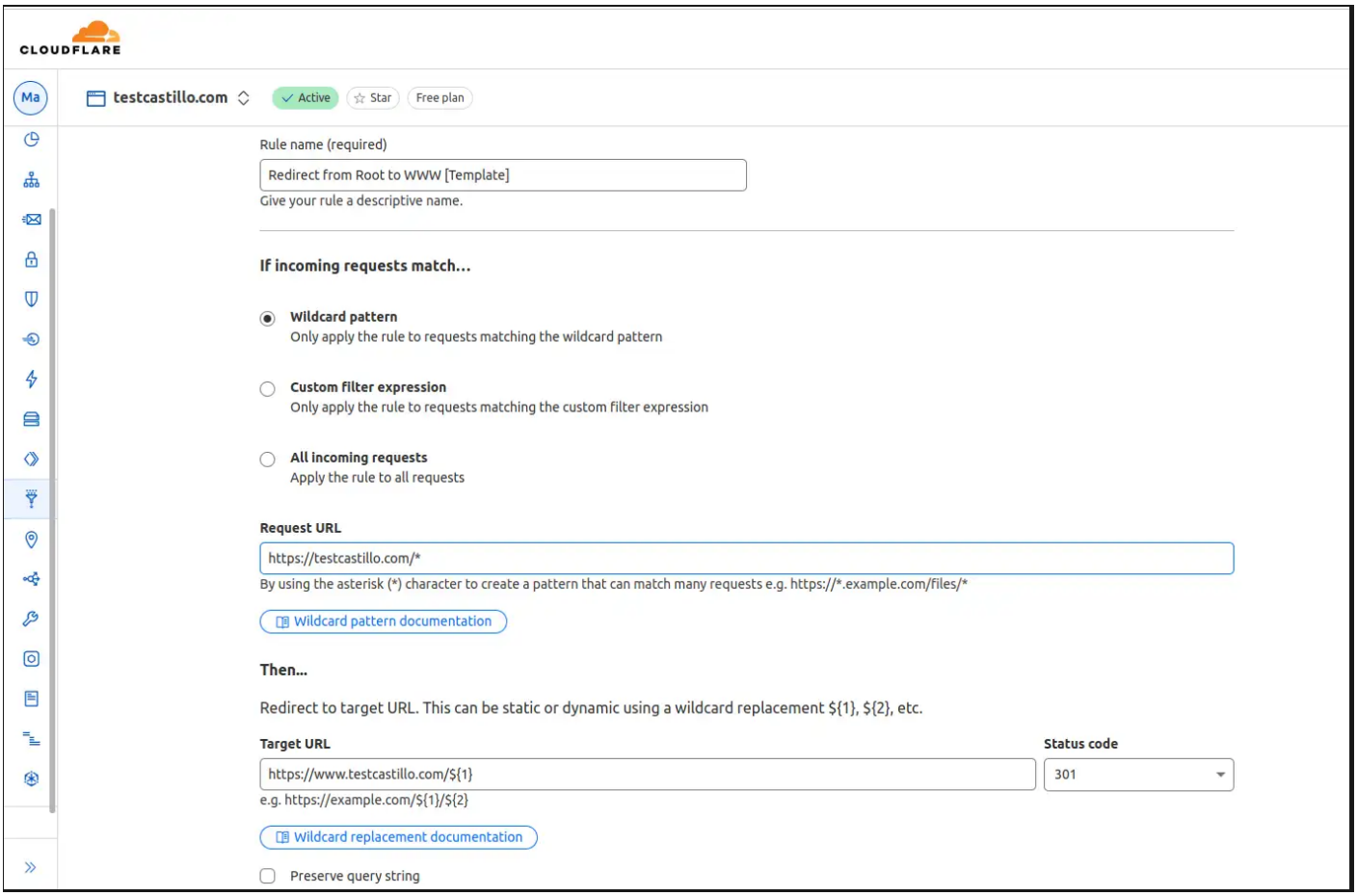
Redirect to a different domain - Cloudflared

https://drive.google.com/file/d/1-uxqWlPEd4vYTOfqIfMYyf_fkyS-vM8D/view?usp=drive_link



Redirect from root to WWW - cloudflared

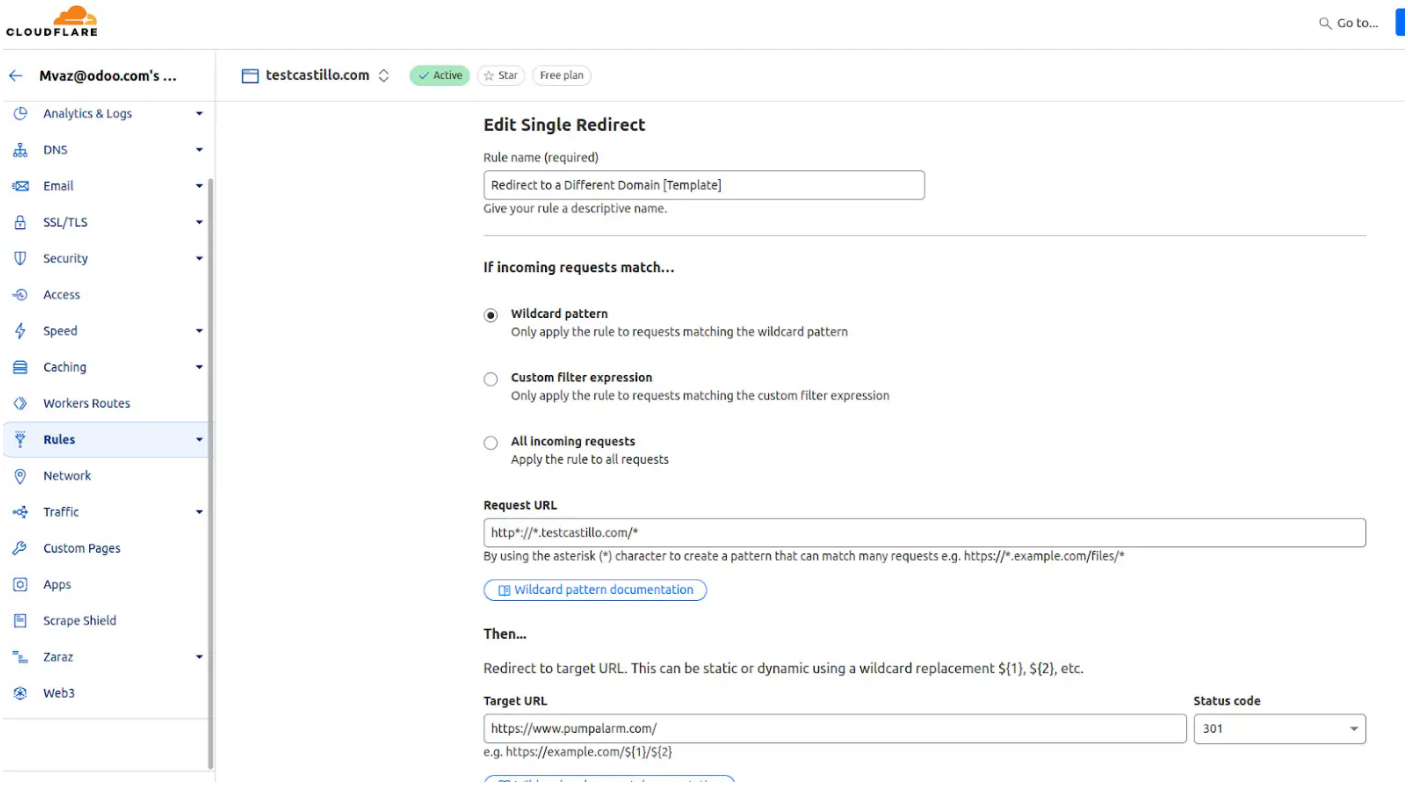
https://drive.google.com/file/d/1igk01QjlggVZXxe2pbHMNy_MtNCZoxkC/view?usp=drive_link

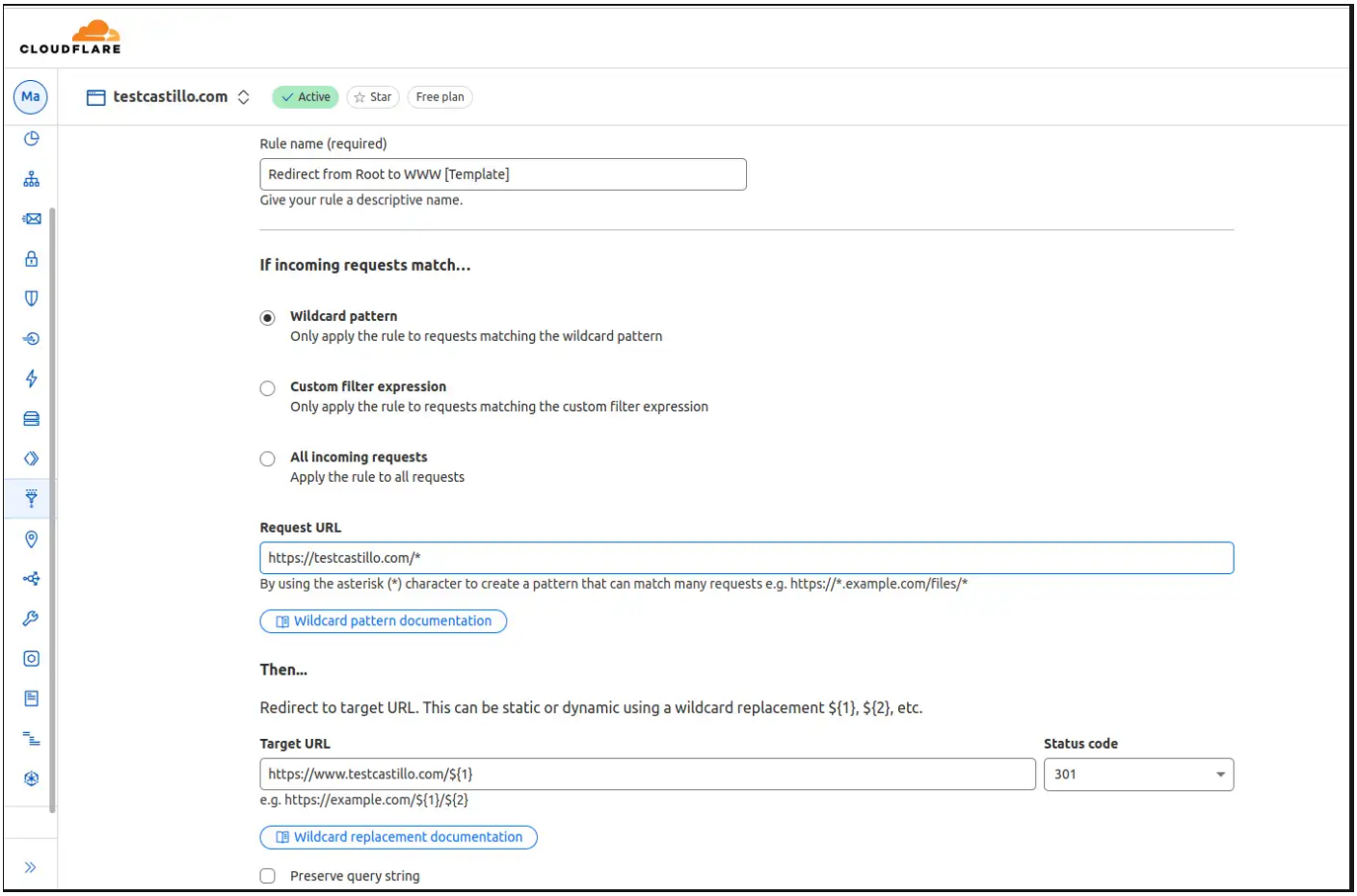


Redirect Domain to New Domain

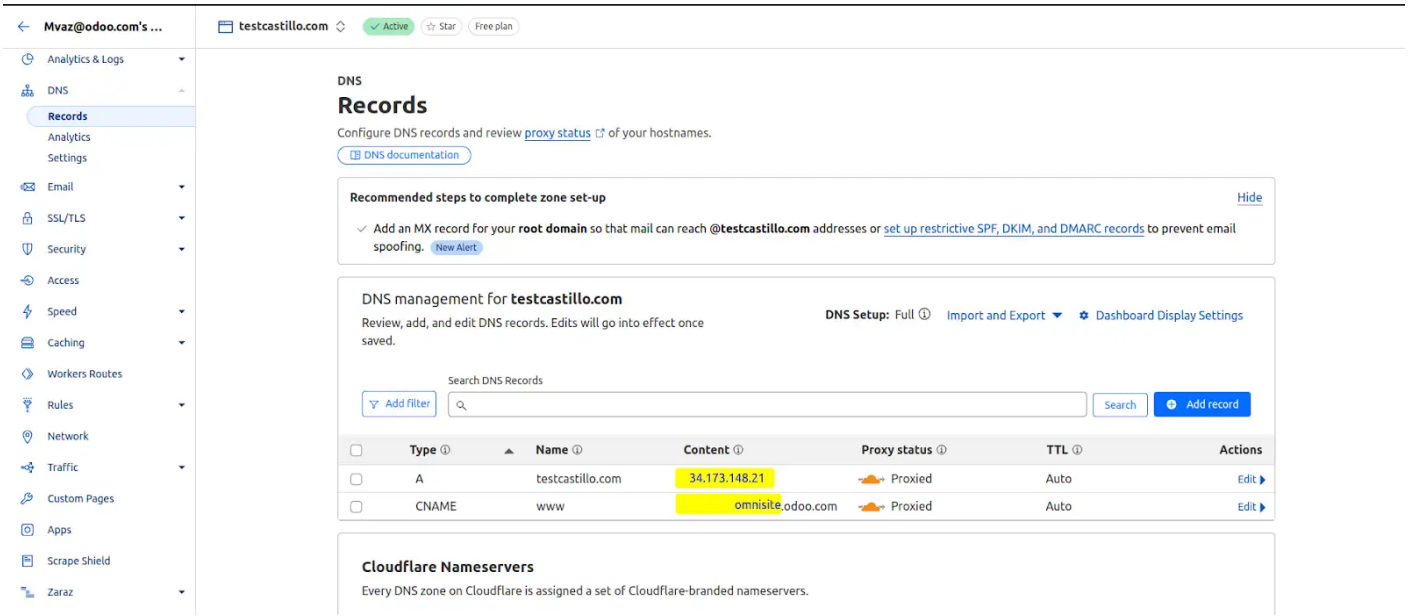
This config should allow you to redirect source.example.com to destination.example.com using cloudflared and Odoo as examples

First setup HTTP 301 redirect rules from the source to the destination domain.





Next configure the DNS records



This should redirect www.source.example.com and source.example.com to www.destination.example.com.

#Cloudflared #Odoo #DNS #Redirect