

## Escenari 1: una aplicació web darrere d'un proxy invers.

- 1) Descargar apache y php
- 2) Listen to 80 y 8080

```
root@arti:~# sudo nano /etc/apache2/ports.conf
```

```
GNU nano 2.2
# If you just change the
# have to change the Vir
# /etc/apache2/sites-ena

Listen 80
Listen 8080

<IfModule ssl_module>
    Listen 443
</IfModule>

<IfModule mod_gnutls.c>
    Listen 443
</IfModule>
```

- 3) Activar los módulos necesarios y reiniciar el apache2

```
root@arti:~# sudo a2ensite 005-timeproxy.conf
Enabling site 005-timeproxy.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@arti:~# sudo systemctl restart apache2
root@arti:~# |
```

```
root@arti:~# sudo a2enmod proxy proxy_http proxy_balancer lbmethod_byrequests
Enabling module proxy.
Considering dependency proxy for proxy_http:
Module proxy already enabled
Enabling module proxy_http.
Considering dependency proxy for proxy_balancer:
Module proxy already enabled
Considering dependency alias for proxy_balancer:
Module alias already enabled
Considering dependency slotmem_shm for proxy_balancer:
Enabling module slotmem_shm.
Enabling module proxy_balancer.
Considering dependency proxy_balancer for lbmethod_byrequests:
Considering dependency proxy for proxy_balancer:
Module proxy already enabled
Considering dependency alias for proxy_balancer:
Module alias already enabled
Considering dependency slotmem_shm for proxy_balancer:
Module slotmem_shm already enabled
Module proxy_balancer already enabled
Enabling module lbmethod_byrequests.
To activate the new configuration, you need to run:
    systemctl restart apache2
root@arti:~# sudo systemctl restart apache2
root@arti:~# |
```

```
root@aarati:~# nano /etc/apache2/sites-available/005-timeproxy.com.conf
```

4) en vm etc/hosts

```
GNU nano 7.2
127.0.0.1 localhost
127.0.1.1 arti

127.0.0.1 www.timeproxy.com
127.0.0.1 www.time.com
```

5) en la maquina virtual host file

```
127.0.0.1 www.time.com
127.0.0.1 www.timeproxy.com
```

6) Clone the project in to var www

```
root@arti:~# cd /var/www
root@arti:/var/www# git clone https://github.com/xz-4rti/timer.git
Cloning into 'timer'...
remote: Enumerating objects: 5, done.
remote: Counting objects: 100% (5/5), done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 5 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (5/5), done.
root@arti:/var/www# |
```

7) permisos al fichero

```
root@arti:~# sudo chown -R www-data:www-data /var/www/timer
sudo chmod -R 755 /var/www/timer
root@arti:~# |
```

8) 000-default change the location of documentroot

```
root@arti:~# sudo nano /etc/apache2/sites-available/000-default.conf
```

```

<VirtualHost *:8080>
    # The ServerName directive sets the requ
    # the server uses to identify itself. Th
    # redirection URLs. In the context of vi
    # specifies what hostname must appear in
    # match this virtual host. For the defau
    # value is not decisive as it is used as
    # However, you must set it for any furth
    #ServerName www.example.com

    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/timer/
    <Directory /var/www/timer/>
        Options Indexes FollowSymLinks
        AllowOverride All
        Require all granted
    </Directory>

```

9) Configurar config de time

```
root@arti:~# sudo nano /etc/apache2/sites-available/006-time.conf
```

```

<VirtualHost *:8080>
    ServerName www.time.com
    DocumentRoot /var/www/timer/

    <Directory /var/www/timer/>
        AllowOverride All
        Require all granted
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/time-error.log
    CustomLog ${APACHE_LOG_DIR}/time-access.log combin
    LogLevel debug
</VirtualHost>

```

```

root@arti:~# sudo a2ensite 006-time.com.conf
Enabling site 006-time.com.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@arti:~# systemctl reload apache2
root@arti:~# |

```

10) Configurar config de time proxy

```
root@arti:~# sudo nano /etc/apache2/sites-available/005-timeproxy.conf
```

```
<VirtualHost *:80>
    ServerName www.timeproxy.com

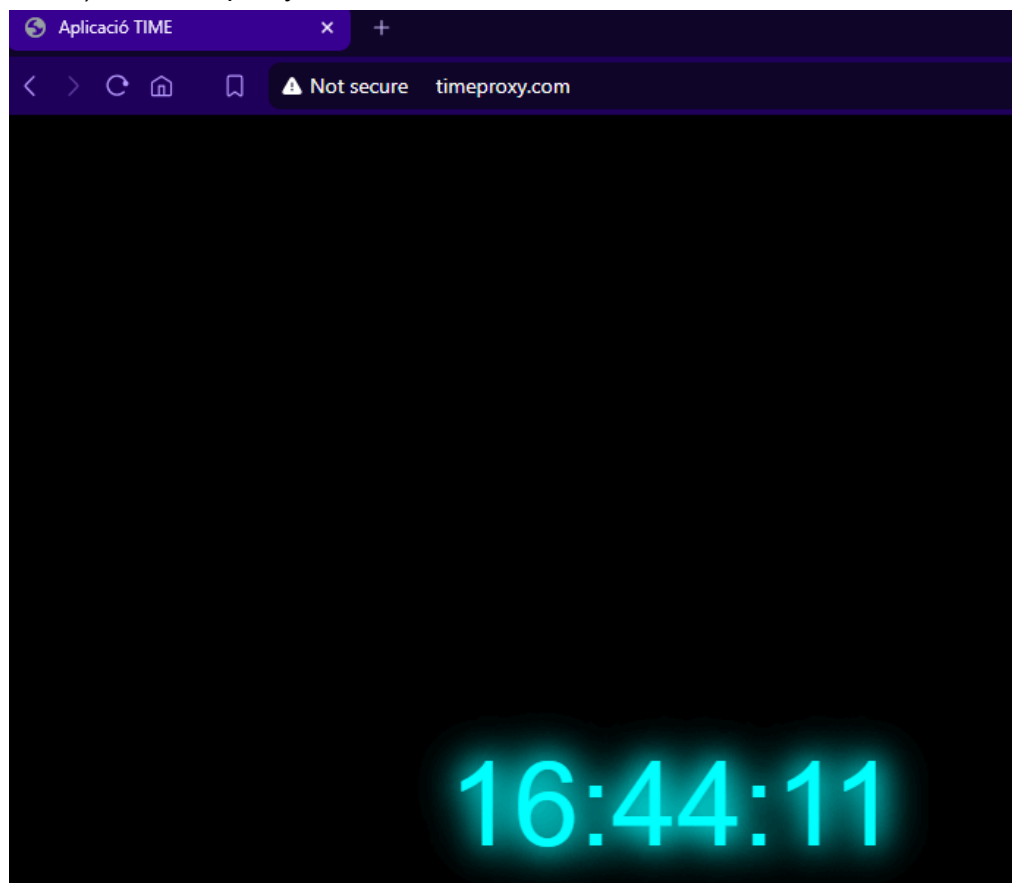
    ProxyPreserveHost On
    ProxyTimeout 120

    ProxyPass / http://www.time.com:8080/
    ProxyPassReverse / http://www.time.com:8080/

    ErrorLog ${APACHE_LOG_DIR}/timeproxy-error.log
    CustomLog ${APACHE_LOG_DIR}/timeproxy-access.log combined
</VirtualHost>
```

```
root@arti:~# sudo a2ensite 005-timeproxy.com.conf
Enabling site 005-timeproxy.com.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@arti:~# sudo a2enmod proxy proxy_http
Module proxy already enabled
Considering dependency proxy for proxy_http:
Module proxy already enabled
Module proxy_http already enabled
root@arti:~# |
```

11) www.timeproxy.com



**Escenari 2: un proxy invers que balancegi entre dues instàncies de la mateixa aplicació.**

1) Crear un nuevo carpeta para time2

```
root@arti:~# mkdir -p /var/www/timer2
```

```
root@arti:~# nano /var/www/timer2/index.php
```

```
<!DOCTYPE html>
<html lang="ca">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Aplicació TIME</title>
  <style>
    body {
      background-color: black;
      color: white;
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
      margin: 0;
      font-family: Arial, sans-serif;
    }
    #time {
      font-size: 5em;
      color: #FF3131; /* red */
      text-shadow: 0 0 20px #FF3131, 0 0 30px #FF3131, 0 0 40px #FF3131;
    }
  </style>
  <script>
    function updateClock() {
      const timeElement = document.getElementById('time');
      const currentTime = new Date();
      const formattedTime = currentTime.toLocaleTimeString('ca-ES', { hour12: false });
      timeElement.textContent = formattedTime;
    }
    setInterval(updateClock, 1000); // Update every second
    window.onload = updateClock; // Initialize on page load
  </script>
</head>
<body>
  <div id="time">
    <?php
      // Mostra l'hora inicial des del servidor
      date_default_timezone_set("Europe/Madrid"); // Defineix la franja horària
      echo date("H:i:s");
    ?>
  </div>
</body>
</html>
```

2) Dar permiso a la carpeta

```
root@arti:~# sudo chown -R www-data:www-data /var/www/timer2
```

3) Servidor virtual para timer2

```
root@arti:~# sudo nano /etc/apache2/sites-available/008-time2.conf
```

```
<VirtualHost *:8081>
    ServerName www.time2.com
    DocumentRoot /var/www/timer2/

    <Directory /var/www/timer2/>
        AllowOverride All
        Require all granted
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/time2_error.log
    CustomLog ${APACHE_LOG_DIR}/time2_access.log combined
</VirtualHost>
```

- Iniciar

```
root@arti:~# sudo a2ensite 008-time2.conf
Enabling site 008-time2.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@arti:~# systemctl reload apache2
```

- Añadir en el fichero host de vm y maquina aliftron

```
root@arti:~# nano /etc/hosts
```

```
127.0.0.1 localhost
127.0.1.1 arti

#127.0.0.1 www.timeproxy.com
127.0.0.1 www.time.com
127.0.0.1 www.time2.com
```

```
127.0.0.1 www.time.com
127.0.0.1 www.time2.com
#127.0.0.1 www.timeproxy.com
```

- 4) Servidor virtual de timebalancer

```
root@arti:~# sudo nano /etc/apache2/sites-available/007-timebalancer.conf
```

```
<VirtualHost *:80>
    ServerName www.timebalancer.com

    ProxyPreserveHost On
    ProxyRequests Off

    <Proxy balancer://timecluster>
        BalancerMember http://www.time.com:8080
        BalancerMember http://www.time2.com:8081
        ProxySet lbmethod=byrequests
    </Proxy>

    ProxyPass / balancer://timecluster/
    ProxyPassReverse / balancer://timecluster/
    ProxyTimeout 500

    ErrorLog ${APACHE_LOG_DIR}/timebalancer_error.log
    CustomLog ${APACHE_LOG_DIR}/timebalancer_access.log combined

    LogLevel debug
</VirtualHost>
```

- Iniciar

```
root@arti:~# sudo a2ensite 007-timebalancer.conf
Enabling site 007-timebalancer.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@arti:~# systemctl reload apache2
```

5) Enable module

```
root@arti:~# sudo a2enmod proxy proxy_balancer lbmethod_byrequests proxy_http
```

```
root@arti:~# nano /etc/hosts
```

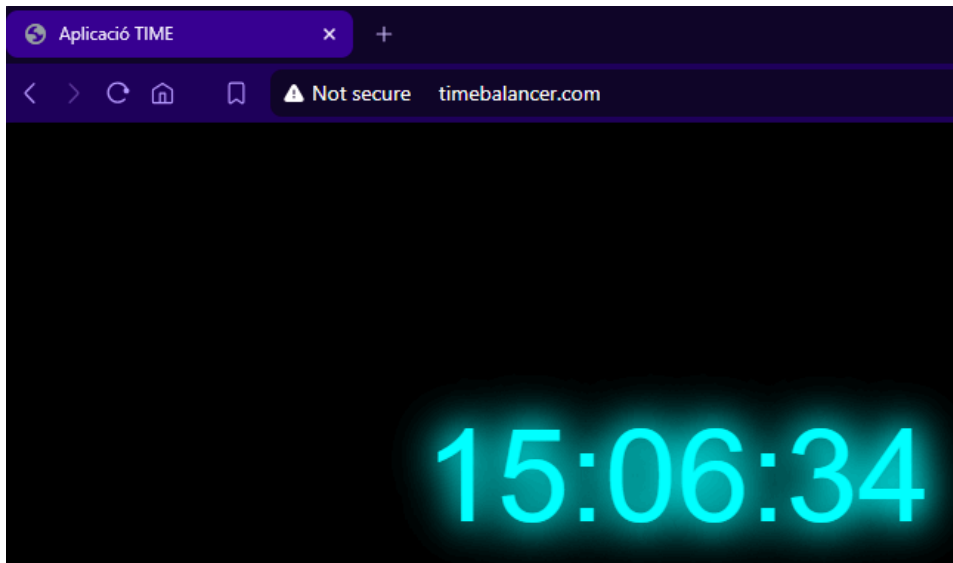
```
#127.0.0.1 www.timeproxy.com
127.0.0.1 www.time.com
127.0.0.1 www.time2.com
127.0.0.1 www.timebalancer.com
```

```
127.0.0.1 www.time.com
#127.0.0.1 www.timeproxy.com
127.0.0.1 www.time2.com
127.0.0.1 www.timebalancer.com
```

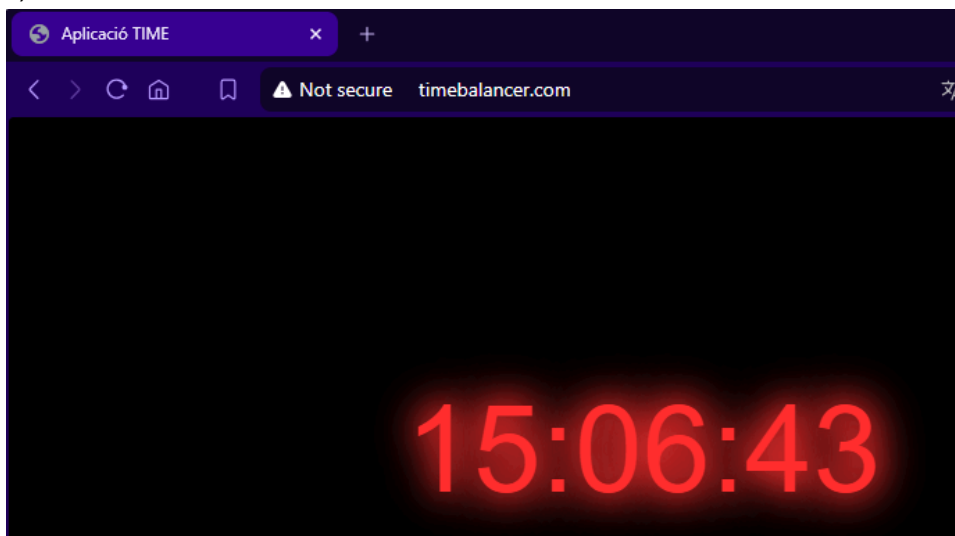
6) prueba:

recargar la pagina 3 veces:

1)



2)



3)

