SERVIDORES WEB DE ALTAS PRESTACIONES

EJERCICIO 2 TEMA 4

Autor
Miguel Ángel Pérez Díaz

Escuela Técnica Superior de Ingenierías Informática y de Telecomunicación

—

Granada,2020

T4.2. INSTALA Y CONFIGURA EN UNA MÁQUINA VIRTUAL EL BALANCEADOR GOBETWEEN).

COMPARA CON LA DIFICULTAD DE LA INSTALACIÓN Y CONFIGURACIÓN USANDO NGINX O HAPROXY (PRÁCTICA 3).

Inicialmente debemos el instalar software a utilizar, en este caso vamos a utilizar Gobetween. Para instalar dicho balanceador se ha intentado instalar con *snap* pero a la hora del fichero de configuración y del funcionamiento se han encontrado algunos problemas, por lo que finalmente se ha instalado siguiendo los siguientes pasos:

- Creamos el directorio y accedemos a él mkdir *gobetween && cd gobetween*

```
miguel444@m3:~$ ls
gobetween  Pound-2.7  pound_2.7-1.3_amd64.deb  pound_2.7-1.3.dsc  pound_2.7.orig.tar.gz
miguel444@m3:~$
```

- *curl -s https://api.github.com/repos/yyyar/gobetween/releases | grep browser_download_url | grep linux_amd64 | cut -d '"' -f 4 | head -n 1 | wget -i -*

```
miguel444@m3:~$ curl -S https://api.github.com/repos/yyyar/gobetween/releases | grep browser_downloa
d_url | grep linux_amd64 | cut -d '"' -f 4 | head -n 1 | wget -i -
```

```
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 96431    0 96431    0     0   103k      0 --:--:-- --:--:-- --:--:--  103k
--2020-04-05 11:47:51--  https://github.com/yyyar/gobetween/releases/download/0.7.0/gobetween_0.7.0_
linux_amd64.tar.gz
Resolving github.com (github.com)... 140.82.118.4
Connecting to github.com (github.com)|140.82.118.4|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://github-production-release-asset-2e65be.s3.amazonaws.com/60521033/43393200-5c7d-11e
9-893e-96f5823e8a7a?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWNJYAX4CSVEH53A%2F2020040
5%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20200405T114751Z&X-Amz-Expires=300&X-Amz-Signature=d200
ffcfc009e6ad7f64ad3fc70be6800b0bd62f59c63bae9eead9a6e71b3361&X-Amz-SignedHeaders=host&actor_id=0&res
ponse-content-disposition=attachment%3B%20filename%3Dgobetween_0.7.0_linux_amd64.tar.gz&response-con
tent-type=application%2Foctet-stream [following]
--2020-04-05 11:47:51--  https://github-production-release-asset-2e65be.s3.amazonaws.com/60521033/43
393200-5c7d-11e9-893e-96f5823e8a7a?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWNJYAX4CSV
EH53A%2F20200405%2Fus-east-1%2Fs3%2Faws4_request&X-Amz-Date=20200405T114751Z&X-Amz-Expires=300&X-Amz
-Signature=d200ffcfc009e6ad7f64ad3fc70be6800b0bd62f59c63bae9eead9a6e71b3361&X-Amz-SignedHeaders=host
&actor_id=0&response-content-disposition=attachment%3B%20filename%3Dgobetween_0.7.0_linux_amd64.tar.
gz&response-content-type=application%2Foctet-stream
Resolving github-production-release-asset-2e65be.s3.amazonaws.com (github-production-release-asset-2
e65be.s3.amazonaws.com)... 52.216.160.19
Connecting to github-production-release-asset-2e65be.s3.amazonaws.com (github-production-release-ass
et-2e65be.s3.amazonaws.com)|52.216.160.19|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 7659518 (7,3M) [application/octet-stream]
Saving to: ‘gobetween_0.7.0_linux_amd64.tar.gz’

gobetween_0.7.0_linux_am 100%[=================================>]   7,30M   570KB/s    in 24s

2020-04-05 11:48:17 (317 KB/s) - ‘gobetween_0.7.0_linux_amd64.tar.gz’ saved [7659518/7659518]

FINISHED --2020-04-05 11:48:17--
Total wall clock time: 27s
Downloaded: 1 files, 7,3M in 24s (317 KB/s)
```

- Descomprimimos el fichero .tar.gz con *tar -zxvf *.tar.gz*

```
miguel444@m3:~$ tar -zxvf *.tar.gz
AUTHORS
CHANGELOG.md
LICENSE
README.md
config/
config/gobetween.toml
gobetween
tar: gobetween: Cannot open: File exists
tar: Exiting with failure status due to previous errors
miguel444@m3:~$
```

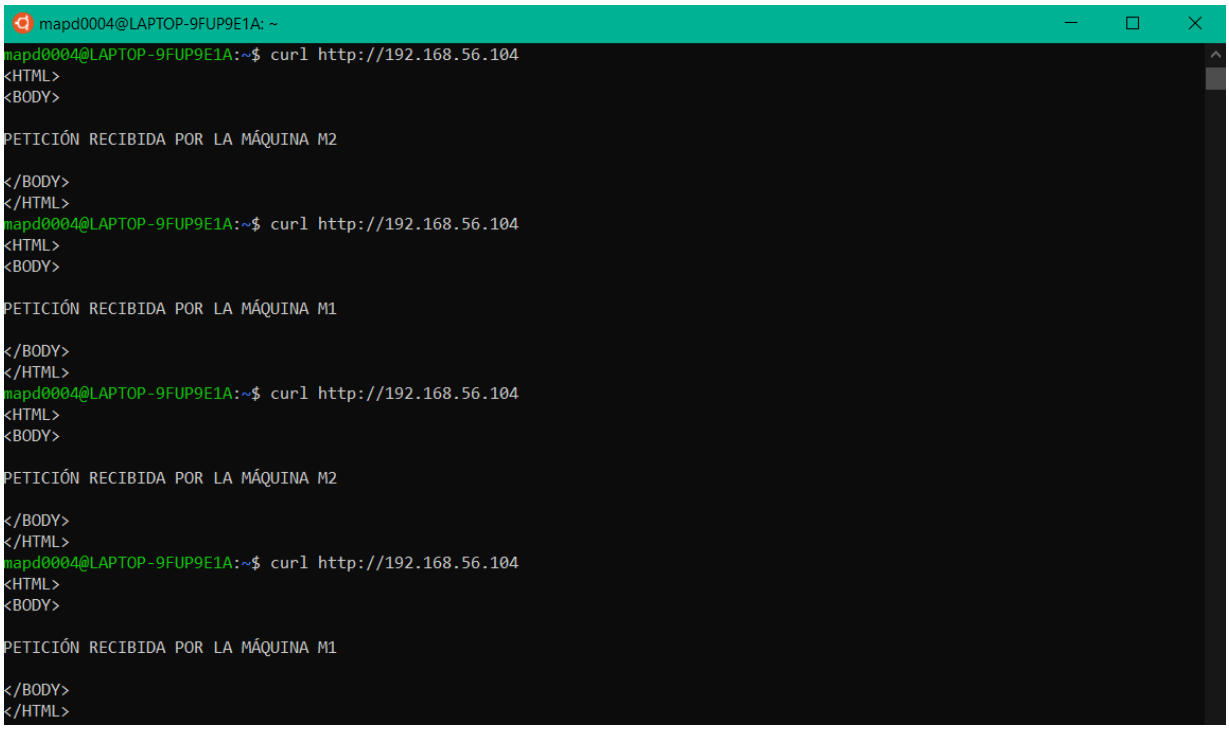
- Vamos a modificar el archivo de configuración para indicar la dirección IP y puerto de los servidores final con *sudo nano config/gobetween.toml.*

```
  GNU nano 2.9.3                          config/gobetween.toml

#[acme]                            # (optional)
#challenge = "http"                # (optional) http | sni | dns
#http_bind = "0.0.0.0:80"          # (optional) It is possible to bind to other port, but letsencryp$
#cache_dir = "/tmp"                # (optional) directory to put acme certificates

#
# Servers contains as many [server.<name>] sections as needed.
#
[servers]

# ---------- tcp example ----------- #

[servers.sample]
protocol = "tcp"
bind = "192.168.56.104:80"
balance = "roundrobin"

  [servers.sample.discovery]
  kind = "static"
  static_list = [
      "192.168.56.12:80",
      "192.168.56.102:80"
  ]


#
# -------------------- example ---------------------------- #

##
## Example server section.
##


^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos   M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line M-E Redo
```

- Una vez configurado el servicio, vamos a ponerlo en marcha: *sudo ./gobetween -c config/gobetween.toml*

```
miguel444@m3:~/gobetween$ sudo ./gobetween -c config/gobetween.toml
gobetween v0.7.0
2020-04-05 12:02:12 [INFO ] (manager): Initializing...
2020-04-05 12:02:12 [INFO ] (server): Creating 'sample': 192.168.56.104:80 roundrobin static none
2020-04-05 12:02:12 [INFO ] (scheduler): Starting scheduler sample
2020-04-05 12:02:12 [INFO ] (manager): Initialized
2020-04-05 12:02:12 [INFO ] (api): Starting up API
2020-04-05 12:02:12 [INFO ] (api): Starting HTTP server :8888
2020-04-05 12:02:12 [INFO ] (metrics): Metrics disabled
```

Finalizada la instalación y configuración del balanceador, y su correspondiente puesta en marcha, vamos a tratar de probar su funcionamiento realizando peticiones desde mi máquina anfitriona.



Ahora podemos comparar la dificultad de instalar **GOBETWEEN** con **NGINX** y **HAPROXY**, ya instalados y configurados en la práctica. En cuanto a instalación parece ser un poco más compleja usando gobetween, ya que como sabemos para los demás balanceadores se ha utilizado un simple apt-get install:

- Nginx: *sudo apt-get install nginx*
- Haproxy: *sudo apt-get install haproxy*

En cuanto configuración podemos ver que no ha sido muy complejo instalar *gobetween*, al igual que tampoco lo ha sido para configurar *nginx* como *haproxy*.

- Nginx:

```
 GNU nano 2.9.3                    /etc/nginx/conf.d/default.conf

upstream servidoresSWAP{
        server 192.168.56.12;
        server 192.168.56.102;
}

server{
   listen 80;
   server_name balanceador;

   access_log /var/log/nginx/balanceador.access.log;
   error_log  /var/log/nginx/balanceador.error.log;
   root /var/www/;

   location  /
   {
        proxy_pass http://servidoresSWAP;
        proxy_set_header Host $host;
        proxy_set_header X-Real-IP $remote_addr;
        proxy_set_header X-Forwarded-For $proxy_add_x_forwarded_for;
        proxy_http_version 1.1;
        proxy_set_header Connection "";
   }

}

                              [ Read 24 lines ]
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo
```

- Haproxy:

```
 GNU nano 2.9.3                  /etc/haproxy/haproxy.cfg                  Modified

        #  https://hynek.me/articles/hardening-your-web-servers-ssl-ciphers/
        # An alternative list with additional directives can be obtained from
        #  https://mozilla.github.io/server-side-tls/ssl-config-generator/?server=haproxy
        ssl-default-bind-ciphers ECDH+AESGCM:DH+AESGCM:ECDH+AES256:DH+AES256:ECDH+AES128:DH+AES:RSA$
        ssl-default-bind-options no-sslv3

defaults
        log     global
        mode    http
        option  httplog
        option  dontlognull
        timeout connect 5000
        timeout client  50000
        timeout server  50000
        errorfile 400 /etc/haproxy/errors/400.http
        errorfile 403 /etc/haproxy/errors/403.http
        errorfile 408 /etc/haproxy/errors/408.http
        errorfile 500 /etc/haproxy/errors/500.http
        errorfile 502 /etc/haproxy/errors/502.http
        errorfile 503 /etc/haproxy/errors/503.http
        errorfile 504 /etc/haproxy/errors/504.http

frontend http-in
        bind *:80
        default_backend servidoresSWAP

backend servidoresSWAP
        balance roundrobin
        server m1 192.168.56.12:80 maxconn 32
        server m2 192.168.56.102:80 maxconn 32


^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos  M-U Undo
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell ^_ Go To Line M-E Redo
```

A mí parece ha sido más complejo configurar ***nginx***, ya que se ha tenido que escribir todo el fichero que podemos ver en la imagen. Después en cuanto a complejidad podemos situar a ***haproxy*** en el que solo se ha modificado las secciones de frontend y backend, y finalmente podemos situar como configuración más fácil a ***gobetween*** ya que solo ha sido necesario modificar la sección de servers.