Nginx均衡负载之一致性hash模块编译安装测试

1. **介绍**

Nginx upstream可以实现负载均衡。

第三方模块ngx\_http\_consistent\_hash通过一致性哈希算法来选择合适的后端节点。

1. **下载、解压**

github下载：https://github.com/replay/ngx\_http\_consistent\_hash

解压：unzip ngx\_http\_consistent\_hash-master.zip

1. **编译到Nginx**

./configure --add-module=/usr/local/src/ngx\_http\_consistent\_hash-master

make

make install

1. **Nginx配置**

user nginx;

worker\_processes 1;

error\_log /var/log/nginx/error.log warn;

pid /var/run/nginx.pid;

events {

worker\_connections 1024;

}

http {

include /etc/nginx/mime.types;

default\_type application/octet-stream;

log\_format main '$remote\_addr - $remote\_user [$time\_local] "$request" '

'$status $body\_bytes\_sent "$http\_referer" '

'"$http\_user\_agent" "$http\_x\_forwarded\_for"';

access\_log /var/log/nginx/access.log main;

sendfile on;

#tcp\_nopush on;

keepalive\_timeout 65;

#gzip on;

##------------LDR 2018-01-08------------##

upstream 47.92.7.48 {

consistent\_hash $request\_uri;

server 45.77.168.38;

server 198.13.38.179;

}

##------------LDR 2018-01-08------------##

server {

listen 80;

server\_name 47.92.7.48;

charset utf-8;

location / {

root html;

index index.html index.htm;

##------------LDR 2018-01-08------------##

proxy\_pass http://47.92.7.48;

proxy\_set\_header X-Real-IP $remote\_addr;

client\_max\_body\_size 100m;

##------------LDR 2018-01-08------------##

}

location ~ ^/(WEB-INF)/ {

deny all;

}

error\_page 500 502 503 504 /50x.html;

location = /50x.html {

root /var/www/html/;

}

}

}

注：记得重启Nginx！

1. **验证方法**

a.发送URL请求

多次发送不同的URL请求。

curl -x 127.0.0.1:80 http://47.92.7.48 -v

[root@iz8vbc8s2d4sericfjjlpuz sbin]# curl -x 127.0.0.1:80 http://47.92.7.48 -v

\* About to connect() to proxy 127.0.0.1 port 80 (#0)

\* Trying 127.0.0.1...

\* Connected to 127.0.0.1 (127.0.0.1) port 80 (#0)

> GET http://47.92.7.48/ HTTP/1.1

> User-Agent: curl/7.29.0

> Host: 47.92.7.48

> Accept: \*/\*

> Proxy-Connection: Keep-Alive

>

< HTTP/1.1 200 OK

< Server: nginx/1.1.10

< Date: Wed, 10 Jan 2018 02:16:23 GMT

< Content-Type: text/html

< Content-Length: 45

< Connection: keep-alive

< Last-Modified: Fri, 05 Jan 2018 09:31:23 GMT

< Accept-Ranges: bytes

<

<h1 align="center">Welcome to nginx-38!</h1>

\* Connection #0 to host 127.0.0.1 left intact

b.抓包查看upstream到的地址

sudo tcpdump -i any tcp port 80 and host 45.77.168.38 or 198.13.38.179 -s0

c.网页访问http://47.92.7.48/

d.查看xshell客户端的输出：

[root@iz8vbc8s2d4sericfjjlpuz local]# sudo tcpdump -i any tcp port 80 and host 45.77.168.38 or 198.13.38.179 -s0

tcpdump: verbose output suppressed, use -v or -vv for full protocol decode

listening on any, link-type LINUX\_SLL (Linux cooked), capture size 65535 bytes

10:32:04.645039 IP iz8vbc8s2d4sericfjjlpuz.57202 > 198.13.38.179.vultr.com.http: Flags [S], seq 1109314954, win 29200, options [mss 1460,sackOK,TS val 498752253 ecr 0,nop,wscale 7], length 0

10:32:04.761498 IP **198.13.38.179**.vultr.com.http > iz8vbc8s2d4sericfjjlpuz.57202: Flags [R.], seq 0, ack 1109314955, win 0, length 0

10:32:04.761634 IP iz8vbc8s2d4sericfjjlpuz.50676 > 45.77.168.38.vultr.com.http: Flags [S], seq 1066987286, win 29200, options [mss 1460,sackOK,TS val 498752370 ecr 0,nop,wscale 7], length 0

10:32:05.047411 IP **45.77.168.38**.vultr.com.http > iz8vbc8s2d4sericfjjlpuz.50676: Flags [S.], seq 2535425476, ack 1066987287, win 28960, options [mss 1460,sackOK,TS val 1255603887 ecr 498752370,nop,wscale 7], length 0

10:32:05.047459 IP iz8vbc8s2d4sericfjjlpuz.50676 > 4**5.77.168.38**.vultr.com.http: Flags [.], ack 1, win 229, options [nop,nop,TS val 498752656 ecr 1255603887], length 0

10:32:05.047511 IP iz8vbc8s2d4sericfjjlpuz.50676 > **45.77.168.38**.vultr.com.http: Flags [P.], seq 1:463, ack 1, win 229, options [nop,nop,TS val 498752656 ecr 1255603887], length 462

10:32:05.320787 IP **45.77.168.38**.vultr.com.http > iz8vbc8s2d4sericfjjlpuz.50676: Flags [.], ack 463, win 235, options [nop,nop,TS val 1255604173 ecr 498752656], length 0

10:32:05.321432 IP **45.77.168.38**.vultr.com.http > iz8vbc8s2d4sericfjjlpuz.50676: Flags [P.], seq 1:153, ack 463, win 235, options [nop,nop,TS val 1255604174 ecr 498752656], length 152

10:32:05.321439 IP iz8vbc8s2d4sericfjjlpuz.50676 > **45.77.168.38**.vultr.com.http: Flags [.], ack 153, win 237, options [nop,nop,TS val 498752930 ecr 1255604174], length 0

10:32:05.321478 IP **45.77.168.38.**vultr.com.http > iz8vbc8s2d4sericfjjlpuz.50676: Flags [F.], seq 153, ack 463, win 235, options [nop,nop,TS val 1255604174 ecr 498752656], length 0

10:32:05.321498 IP iz8vbc8s2d4sericfjjlpuz.50676 > **45.77.168.38**.vultr.com.http: Flags [F.], seq 463, ack 154, win 237, options [nop,nop,TS val 498752930 ecr 1255604174], length 0

10:32:05.583803 IP **45.77.168.38**.vultr.com.http > iz8vbc8s2d4sericfjjlpuz.50676: Flags [.], ack 464, win 235, options [nop,nop,TS val 1255604447 ecr 498752930], length 0

**结果：**

1）.页面访问完之后，显示的38的页面；

2）.抓包的结果，显示179一次，剩余的都回同一个upstream的IP地址 > 45.77.168.38

附：<https://www.nginx.com/resources/wiki/modules/consistent_hash/> Consistent Hash官文