# Create Haproxy Loadbalancer Access Control Lists and forward incoming frontend traffics based on simple logic

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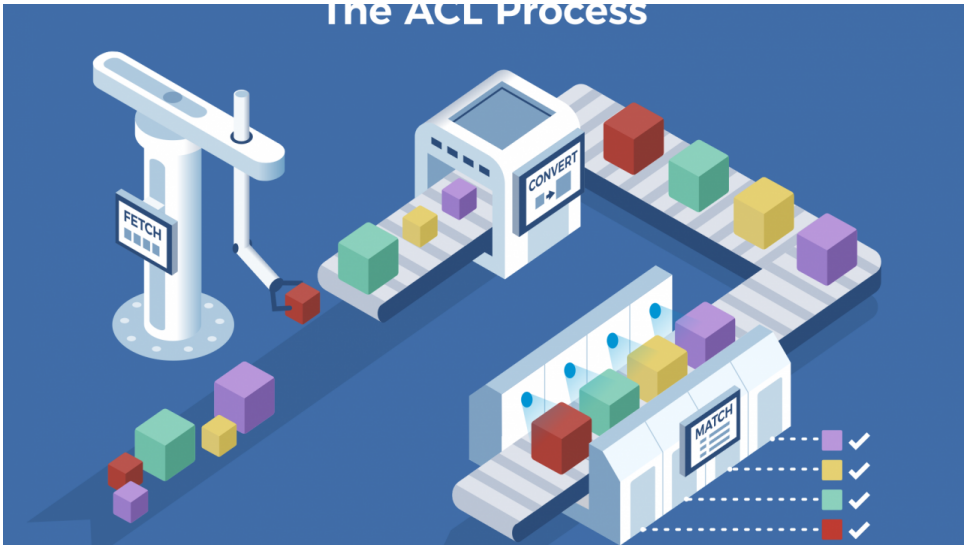


**Haproxy Load Balancers could do pretty much to load balance traffic between application servers. The most straight forward way to use is to balance traffic for incoming Frontends towards a Backend configuration with predefined Application machines and ports to send the traffic, where one can be the leading one and others be set as backup or we can alternatively send the traffic towards a number of machines incoming to a Frontend port bind IP listener and number of backend machine.**

Besides this the more interesting capabilities of Haproxy comes with using Access Control Lists (ACLs) to forward Incoming Frontend (FT) traffic towards specific backends and ports based on logic, power ACLs gives to Haproxy to do a sophisticated load balancing are enormous.
In this post I'll give you a very simple example on how you can save some time, if you have already a present Frontend listening to a Range of TCP Ports and it happens you want to redirect some of the traffic towards a spefic predefined Backend.

**T**his is not the best way to it as Access Control Lists will put some extra efforts on the server CPU, but as today machines are quite powerful, it doesn't really matter. By using a simple ACLs as given in below example, one can save much of a time of writting multiple frontends for a complete sequential port range, if lets say only two of the ports in the port range and **distinguish and redirect traffic incoming to Haproxy frontend listener in the port range of *61000-61230* towards a certain Ports that are supposed to go to a Common Backends to a separate ones, lets say ports *61115 and 61215*.**

Here is a short description on the overall screnarios. We have an haproxy with 3 VIP (Virtual Private

IPs) with a Single Frontend with 3 binded IPs and 3 Backends, there is a configured ACL rule to redirect traffic for certain ports, the overall Load Balancing config is like so:

**Frontend (ft):**

**ft_PROD**:
listen IPs:

*192.168.0.77*
*192.168.0.83*
*192.168.0.78*

On TCP port range: **61000-61299**

**Backends (bk):**

**bk_PROD_ROUNDROBIN**
**bk_APP1**
**bk_APP2**

Config Access Control Liststo seperate incoming haproxy traffic for CUSTOM_APP1 and CUSTOM_APP2

By default send all incoming FT traffic to: **bk_PROD_ROUNDROBIN**

With exception for frontend configured ports on:
**APP1** port **61115**
**APP2** port **61215**

If custom **APP1** send to *bk*:
**RULE1**
If custom **APP2** send to *bk*:
**RULE2**

Config on frontends traffic send operation:

**bk_PROD_ROUNDROBIN** (roundrobin) traffic send to App machines all in parallel
traffic routing mode (roundrobin)
*Appl1*
*Appl2*
*Appl3*
*Appl4*

**bk_APP1** and **bk_APP2**

traffic routing mode: (balance source)

**Appl1** default serving host

If configured check port 61888, 61887 is down, traffic will be resend to configured pre-configured backup hosts:

*Appl2*
*Appl3*
*Appl4*

**/etc/haproxy/haproxy.cfg** that does what is described with ACL LB capabilities looks like so:

```
#---------------------------------------------------------------------
# Global settings
#---------------------------------------------------------------------
global
    log         127.0.0.1 local2

    chroot      /var/lib/haproxy
    pidfile     /var/run/haproxy.pid
    maxconn     4000
    user        haproxy
    group       haproxy
    daemon

    # turn on stats unix socket
    stats socket /var/lib/haproxy/stats

#---------------------------------------------------------------------
# common defaults that all the 'listen' and 'backend' sections will
# use if not designated in their block
#---------------------------------------------------------------------
defaults
    mode                    tcp
    log                     global
    option                  tcplog
    #option                 dontlognull
    #option http-server-close
    #option forwardfor       except 127.0.0.0/8
    option                  redispatch
    retries                 7
    #timeout http-request    10s
    timeout queue           10m
    timeout connect         30s
    timeout client          20m
```

```
    timeout server          10m
    #timeout http-keep-alive 10s
    timeout check           30s
    maxconn                 3000

#---------------------------------------------------------------------
# Synchronize server entries in sticky tables
#---------------------------------------------------------------------

  peers hapeers
    peer haproxy1-fqdn.com 192.168.0.58:8388
    peer haproxy2-fqdn.com 192.168.0.79:8388

#---------------------------------------------------------------------
# HAProxy Monitoring Config
#---------------------------------------------------------------------
listen stats 192.168.0.77:8080              #Haproxy Monitoring run on port 8080
    mode http
    option httplog
    option http-server-close
    stats enable
    stats show-legends
    stats refresh 5s
    stats uri /stats                        #URL for HAProxy monitoring
    stats realm Haproxy\ Statistics
    stats auth hauser:secretpass4321        #User and Password for login to the monitoring
dashboard
    stats admin if TRUE
    #default_backend bk_Prod1        #This is optionally for monitoring backend
#---------------------------------------------------------------------
# HAProxy Monitoring Config
#---------------------------------------------------------------------
#listen stats 192.168.0.83:8080              #Haproxy Monitoring run on port 8080
#    mode http
#    option httplog
#    option http-server-close
#    stats enable
#    stats show-legends
#    stats refresh 5s
#    stats uri /stats                        #URL for HAProxy monitoring
#    stats realm Haproxy\ Statistics
#    stats auth hauser:secretpass321         #User and Password for login to the monitoring
dashboard
#    stats admin if TRUE
#    #default_backend bk_Prod1          #This is optionally for monitoring backend
```

```
  #---------------------------------------------------------------------
# HAProxy Monitoring Config
#---------------------------------------------------------------------
# listen stats 192.168.0.78:8080              #Haproxy Monitoring run on port 8080
#    mode http
#    option httplog
#    option http-server-close
#    stats enable
#    stats show-legends
#    stats refresh 5s
#    stats uri /stats                        #URL for HAProxy monitoring
#    stats realm Haproxy\ Statistics
#    stats auth hauser:secretpass123         #User and Password for login to the monitoring
dashboard
#    stats admin if TRUE
#    #default_backend bk_DKV_PROD_WLPFO         #This is optionally for monitoring backend

#---------------------------------------------------------------------
# frontend which proxys to the backends
#---------------------------------------------------------------------
frontend ft_PROD
   mode tcp
   bind 192.168.0.77:61000-61299
      bind 192.168.0.83:51000-51300
      bind 192.168.0.78:51000-62300
   option tcplog
      # (4) Peer Sync: a sticky session is a session maintained by persistence
      stick-table type ip size 1m peers hapeers expire 60m
# Commented for change CHG0292890
#   stick on src
   log-format %ci:%cp\ [%t]\ %ft\ %b/%s\ %Tw/%Tc/%Tt\ %B\ %ts\ %ac/%fc/%bc/%sc/%rc\
%sq/%bq
      acl RULE1 dst_port 61115
      acl RULE2 dst_port 61215
      use_backend APP1 if app1
      use_backend APP2 if app2
   default_backend bk_PROD_ROUNDROBIN

#---------------------------------------------------------------------
# round robin balancing between the various backends
#---------------------------------------------------------------------
backend bk_PROD_ROUNDROBIN
   mode tcp
   # (0) Load Balancing Method.
   balance roundrobin
   # (4) Peer Sync: a sticky session is a session maintained by persistence
```

```
    stick-table type ip size 1m peers hapeers expire 60m
    # (5) Server List
    # (5.1) Backend
    server appl1 10.33.0.50 check port 31232
    server appl2 10.33.0.51 check port 31232
    server appl2 10.45.0.78 check port 31232
    server appl3 10.45.0.79 check port 31232

  #---------------------------------------------------------------------
# source balancing for the GUI
#---------------------------------------------------------------------
backend bk_APP2
    mode tcp
    # (0) Load Balancing Method.
    balance source
    # (4) Peer Sync: a sticky session is a session maintained by persistence
    stick-table type ip size 1m peers hapeers expire 60m
        stick on src
    # (5) Server List
    # (5.1) Backend
    server appl1 10.33.0.50 check port 55232
    server appl2 10.32.0.51 check port 55232 backup
    server appl3 10.45.0.78 check port 55232 backup
    server appl4 10.45.0.79 check port 55232 backup

  #---------------------------------------------------------------------
# source balancing for the OLW
#---------------------------------------------------------------------
backend bk_APP1
    mode tcp
    # (0) Load Balancing Method.
    balance source
    # (4) Peer Sync: a sticky session is a session maintained by persistence
    stick-table type ip size 1m peers hapeers expire 60m
        stick on src
    # (5) Server List
    # (5.1) Backend
    server appl1 10.33.0.50 check port 53119
    server appl2 10.32.0.51 check port 53119 backup
    server appl3 10.45.0.78 check port 53119 backup
    server appl4 10.45.0.79 check port 53119 backup
```

*You can also* check and download the haproxy.cfg here**.**

***Enjjoy !***