HAProxy Load balancer and proxy

CONCEPTS

Always run haproxy -c before a reload: a bad config keeps the old process serving.

frontend bind, ACLs
↓ use_backend
backend balance, checks
↓ balance
server app instance

A request flows through frontend rules to a backend

global process settings
defaults shared timeouts, mode
frontend / backend listen = both in one

Sections of haproxy.cfg

Runtime changes via the socket are lost on reload; persist them in the config.

PROCESS CONTROL

haproxy -c -f *<file>*
Validate config and exit

haproxy -f *<file>*
Start with a config file

haproxy -D -f *<file>*
Fork into the background

haproxy -W -f *<file>*
Master-worker mode

haproxy -db -f *<file>*
Foreground, no master-worker

haproxy -d -f *<file>*
Debug mode, show events

haproxy -p *<pidfile>* **-f** *<file>*
Write PIDs to a file

haproxy -sf *<pid>*
Reload; old process stops gracefully

haproxy -v
Print version and build date

haproxy -vv
Build options and libraries

kill -USR2 *<master-pid>*
Reload in master-worker mode

kill -USR1 *<pid>*
Graceful stop

PROCESS CONTROL (cont.)

kill -TERM *<pid>*
Hard stop

RUNTIME API

stats socket /run/haproxy.sock mode 600 level admin
Enable the socket (global section)

echo "*<command>***" | socat /run/haproxy.sock stdio**
Run one command via socat

echo "show info;show stat" | socat /run/haproxy.sock stdio
Several commands, semicolon-separated

socat /run/haproxy.sock readline
Interactive session

help
List the available commands

show info
Version, uptime, load, limits

show stat
CSV stats for all proxies

show servers state *<backend>*
Server states and weights

show errors
Last request/response errors

SERVERS AND LIMITS

disable server *<be>*/*<srv>*
Put server in maintenance

enable server *<be>*/*<srv>*
Bring server back

set server *<be>*/*<srv>* **state drain**
Stop new sessions, keep persisted

set server *<be>*/*<srv>* **state ready**
Normal mode

set server *<be>*/*<srv>* **weight** *<n>*[%]
Change load share

set server *<be>*/*<srv>* **addr** *<ip>* [**port** *<p>*]
Change server address

SERVERS AND LIMITS (cont.)

set maxconn global *<n>*
Change global maxconn

TABLES, ACLS AND MAPS

show table
List stick-tables

show table *<name>*
Dump entries of one table

add acl *<acl>* *<pattern>*
Add an ACL entry

del acl *<acl>* *<key>*
Remove an ACL entry

CONFIG BASICS

global
Process-wide settings section

defaults
Shared mode and timeouts

frontend *<name>*
Where clients connect

backend *<name>*
Pool of servers

bind :*<port>*
Accept connections on a port

mode http
Layer 7 proxying

server *<name>* *<ip>*:*<port>* **check**
Add a checked server

balance roundrobin
Rotate across servers

default_backend *<name>*
Fallback backend

use_backend *<name>* **if** *<acl>*
Route by condition

acl *<name>* *<criterion>* *<value>*
Define a named condition

http-request redirect scheme https unless { ssl_fc }
Force HTTPS

timeout client|server|connect *<t>*
Set timeouts