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

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

prompt
Toggle interactive mode

help
List the available commands

show info
Version, uptime, load, limits

show stat
CSV stats for all proxies

show stat json
Stats as JSON

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

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

MASTER CLI AND TLS

reload
Synchronous reload via master CLI

show proc
List master and worker processes

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