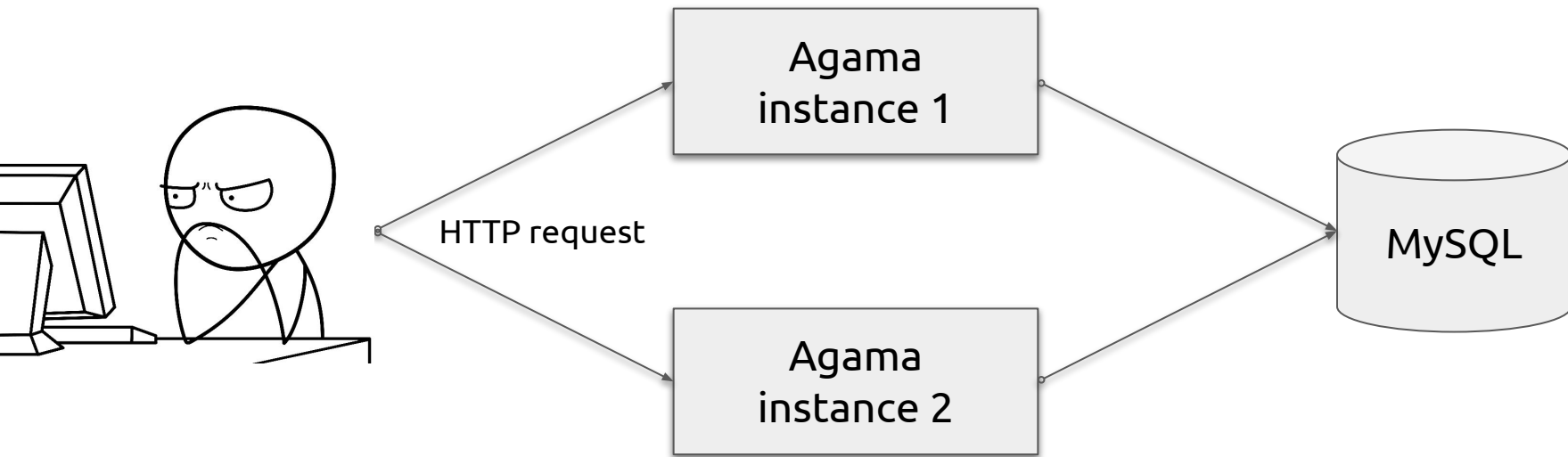


IT Infrastructure services

Roman Kuchin
Juri Hudolejev
2023

Everything should die!

Webserver redundancy: round-robin DNS



```
$ host www.mydomain
www.mydomain has address 11.22.33.81
www.mydomain has address 11.22.33.82
```

Webserver redundancy: round-robin DNS

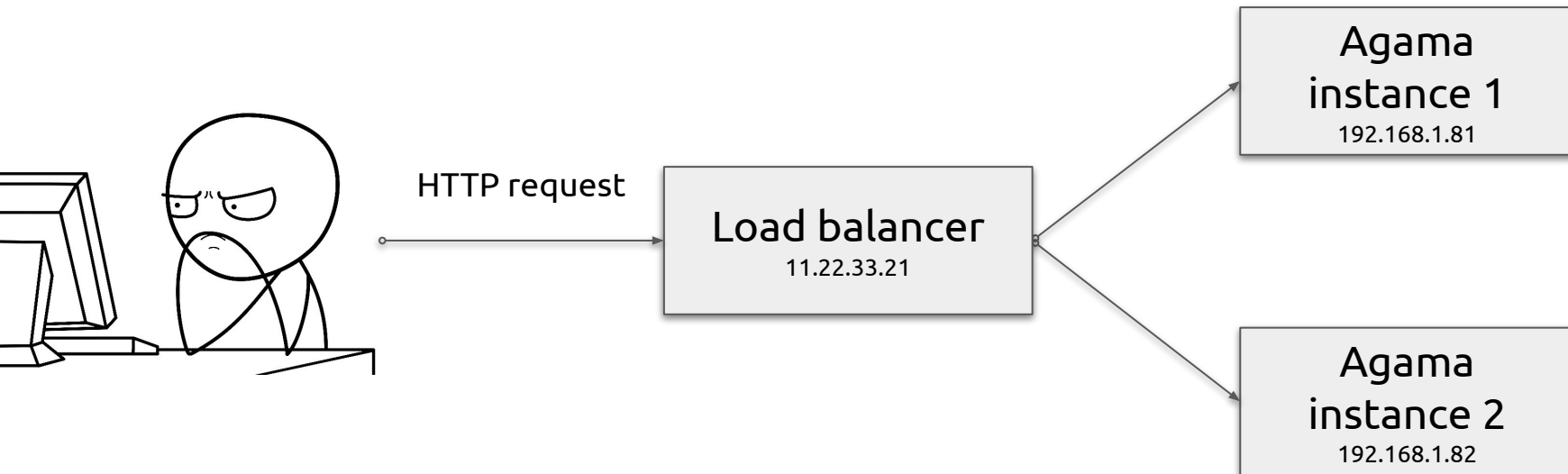
Pros:

- Easy to implement
- No additional software/hardware required

Cons:

- DNS caching
- No service health checks (IP may resolve but the service itself is down)
- **The client should support this**

Server-side load balancing



```
$ host www.mydomain
www.mydomain has address 11.22.33.21
```

Server-side load balancing

Pros:

- Service health and utilization checks
- Load **balancing**, not just distribution

Cons:

- Additional software, hardware or cloud service required
- Another component that needs to be highly available

Server-side load balancing

Hardware

- Appliances by F5 Networks, A10, NetScaler etc.

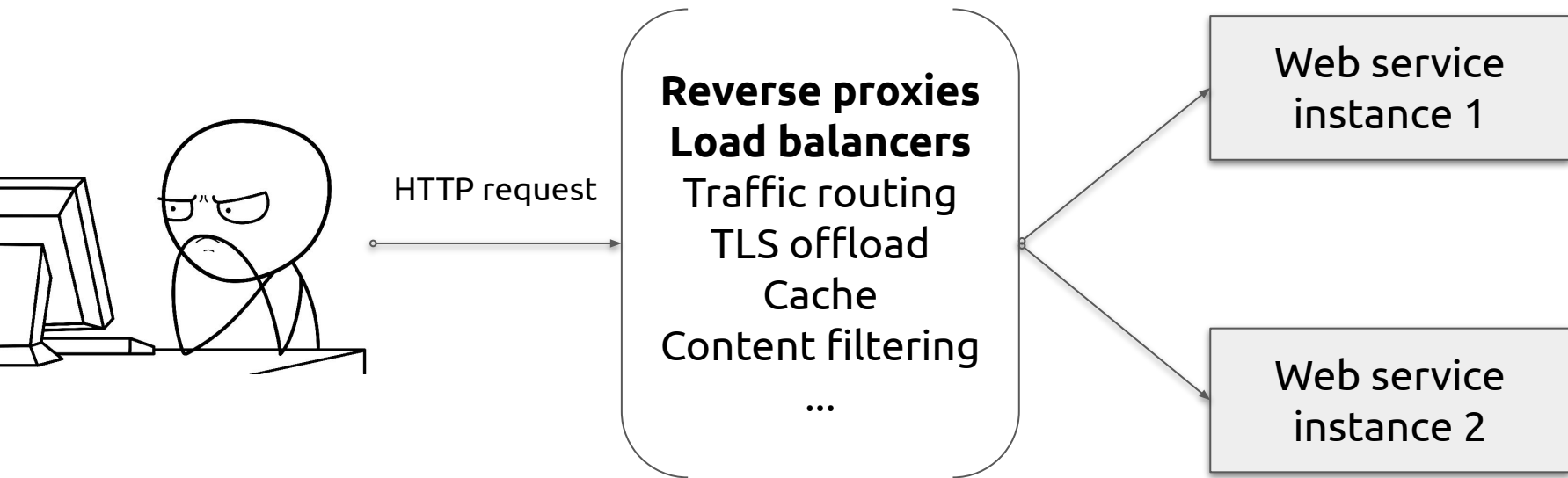
Cloud based

- Most cloud providers and IaaS platforms
- Every CDN

Software

- HAProxy, Nginx, Traefik etc.

Server-side load balancing and more



Server-side load balancing: HAProxy vs Nginx

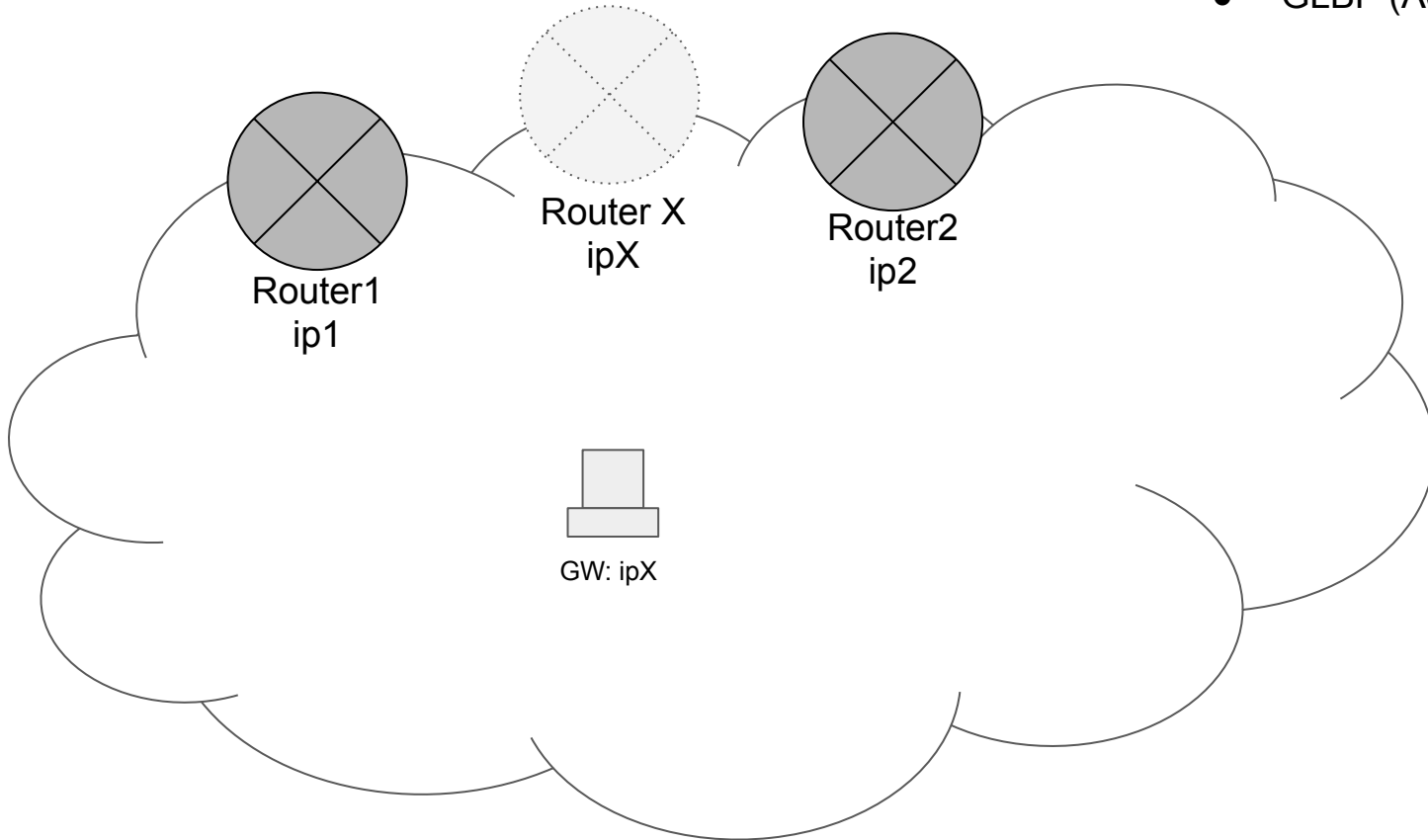
- **Both are fine for simple load balancing**
- If you want something more advanced, check the docs and choose wisely
- HAProxy is solely a proxy, Nginx is also a web server

Possible advise (very holy-war'ish)

- If you **already use** Nginx and need a simple load balancer, go on with Nginx
- If you don't have any load-balancing capable service yet, start with HAProxy

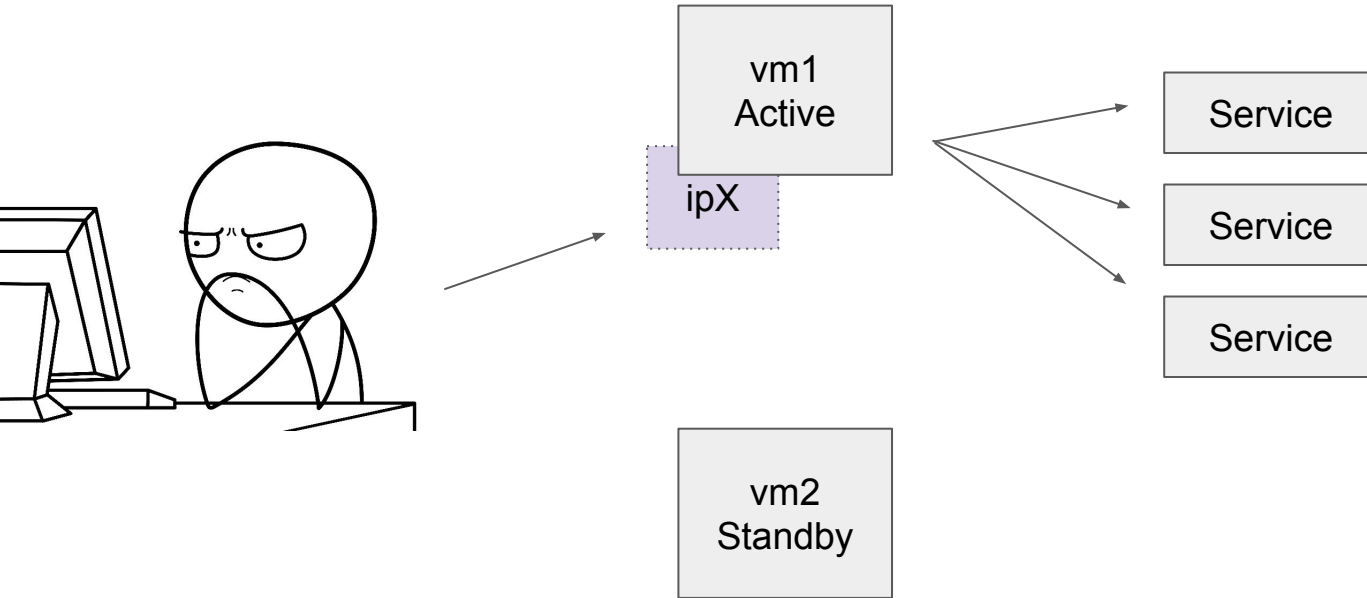
FHRP

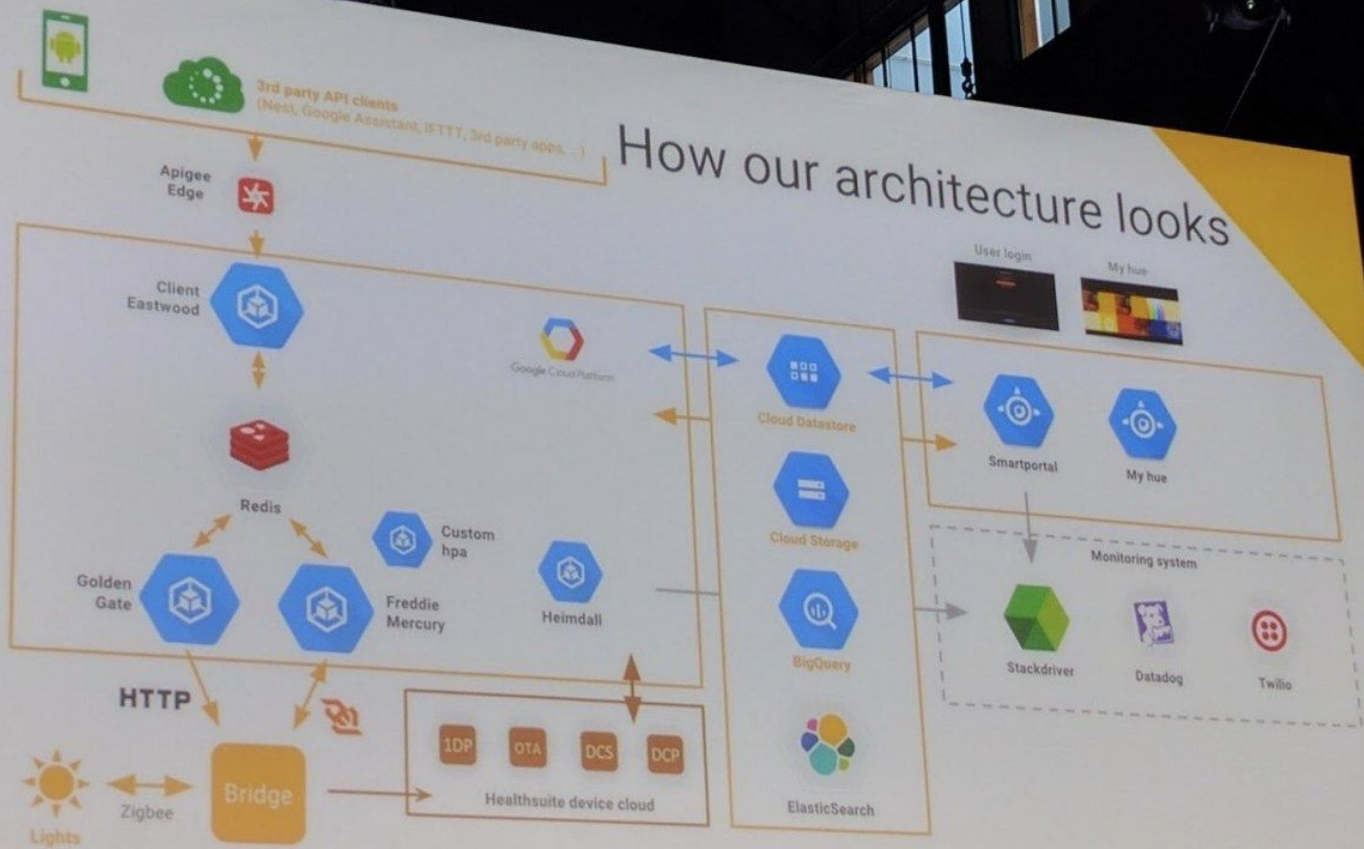
- HSRP (Active/Standby)
- VRRP (Active/Standby)
- GLBP (Active/Active)



Keepalived (VRRP)

<https://www.keepalived.org/manpage.html>





Google Cloud