OpenStack in
Debian GNU/Linux
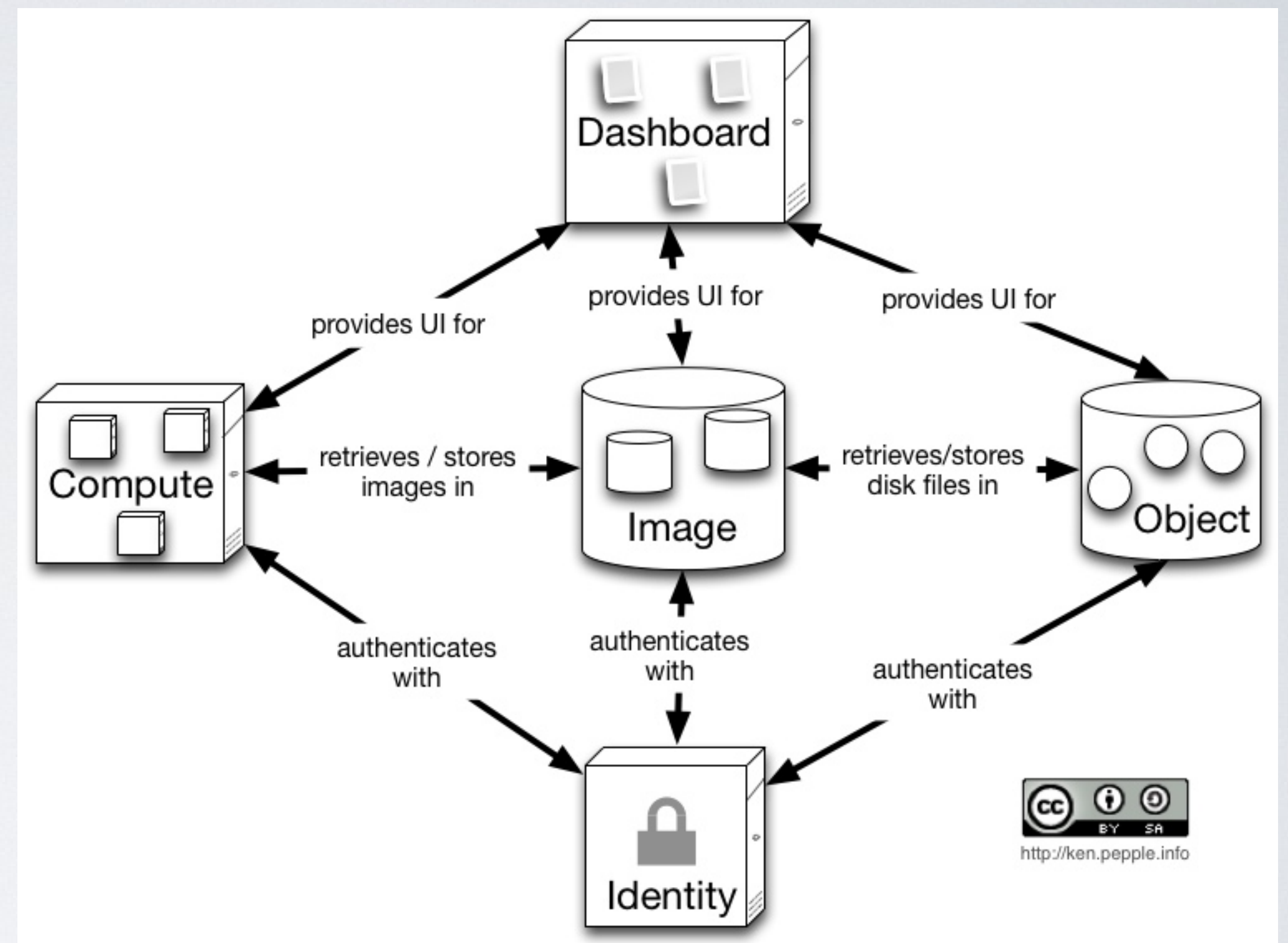
Loïc Dachary
loic@debian.org

July 10, 2012

Executive summary

- Goal : apt-get install openstack

- Reality : Follow a HOWTO

- Goal : unified effort with Ubuntu

- Reality : too much redundancy and not enough communication

- Goal : stable releases

- Reality : six months vs over 18 month release cycle
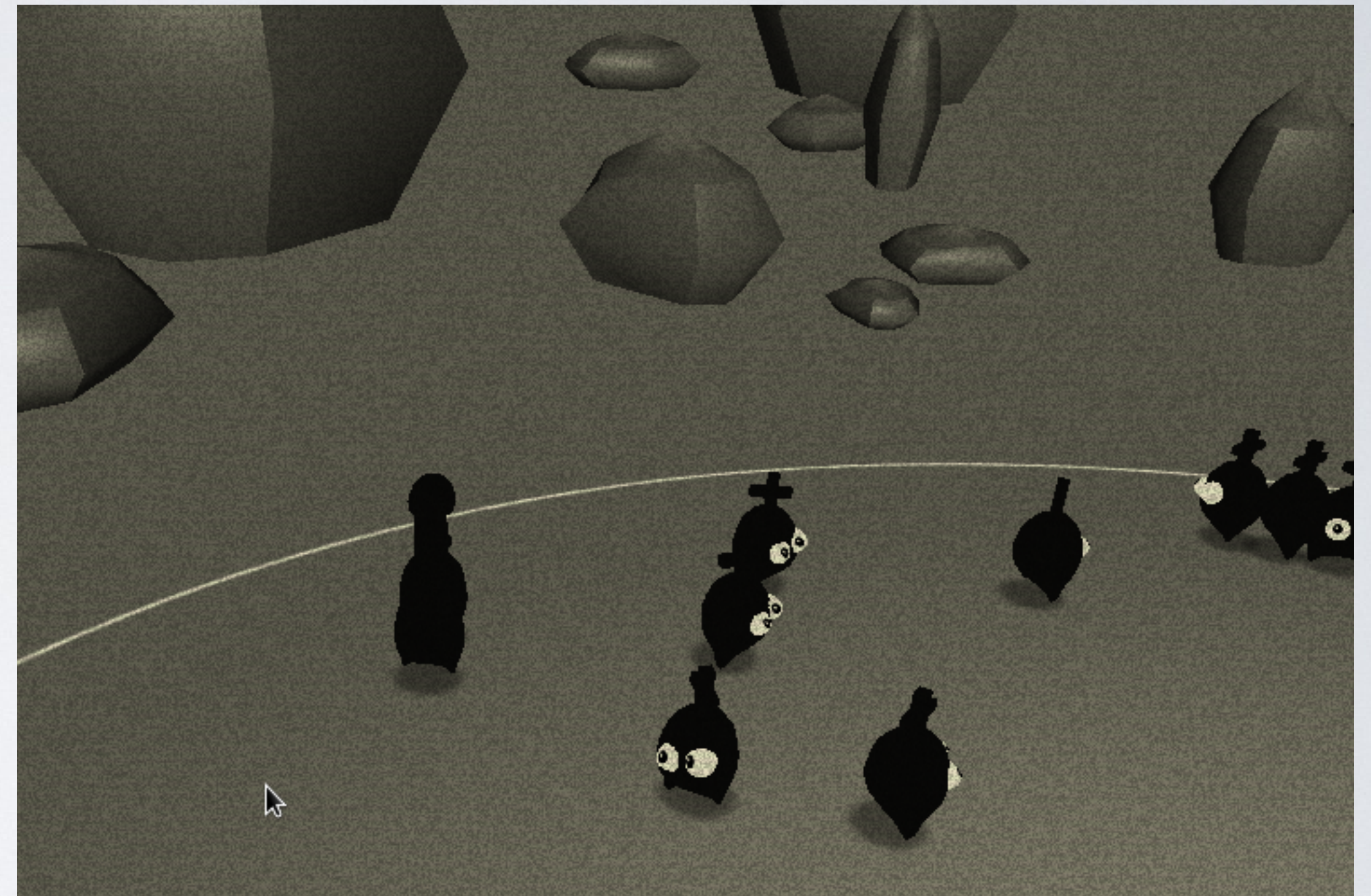
OpenStack 101

- IaaS / PaaS / SaaS

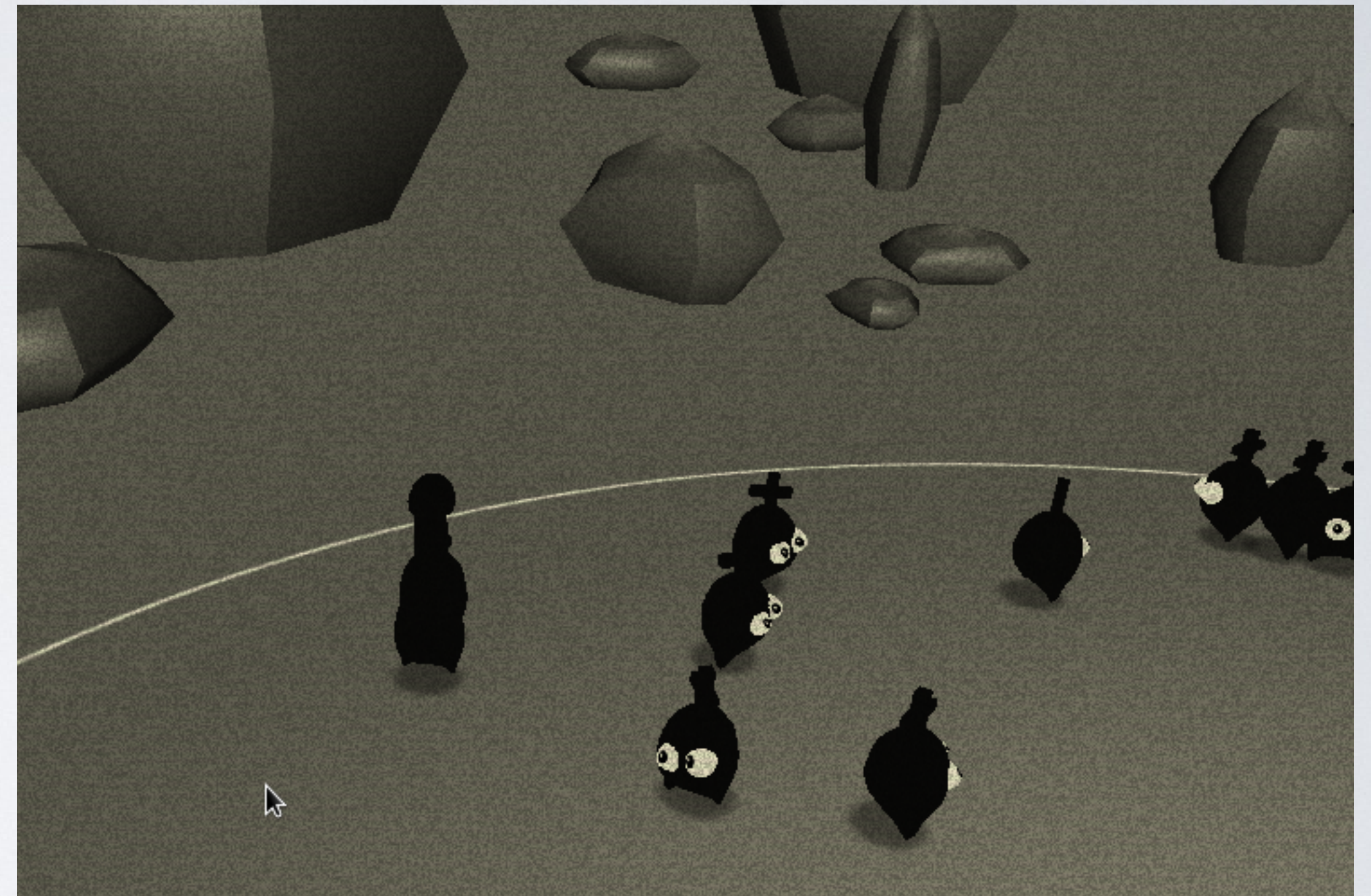- compute

- storage

- network

- APIs

A WebGL game

- Collect creatures

- Make a circle around the target

- Go to the next level

A WebGL game

- Collect creatures
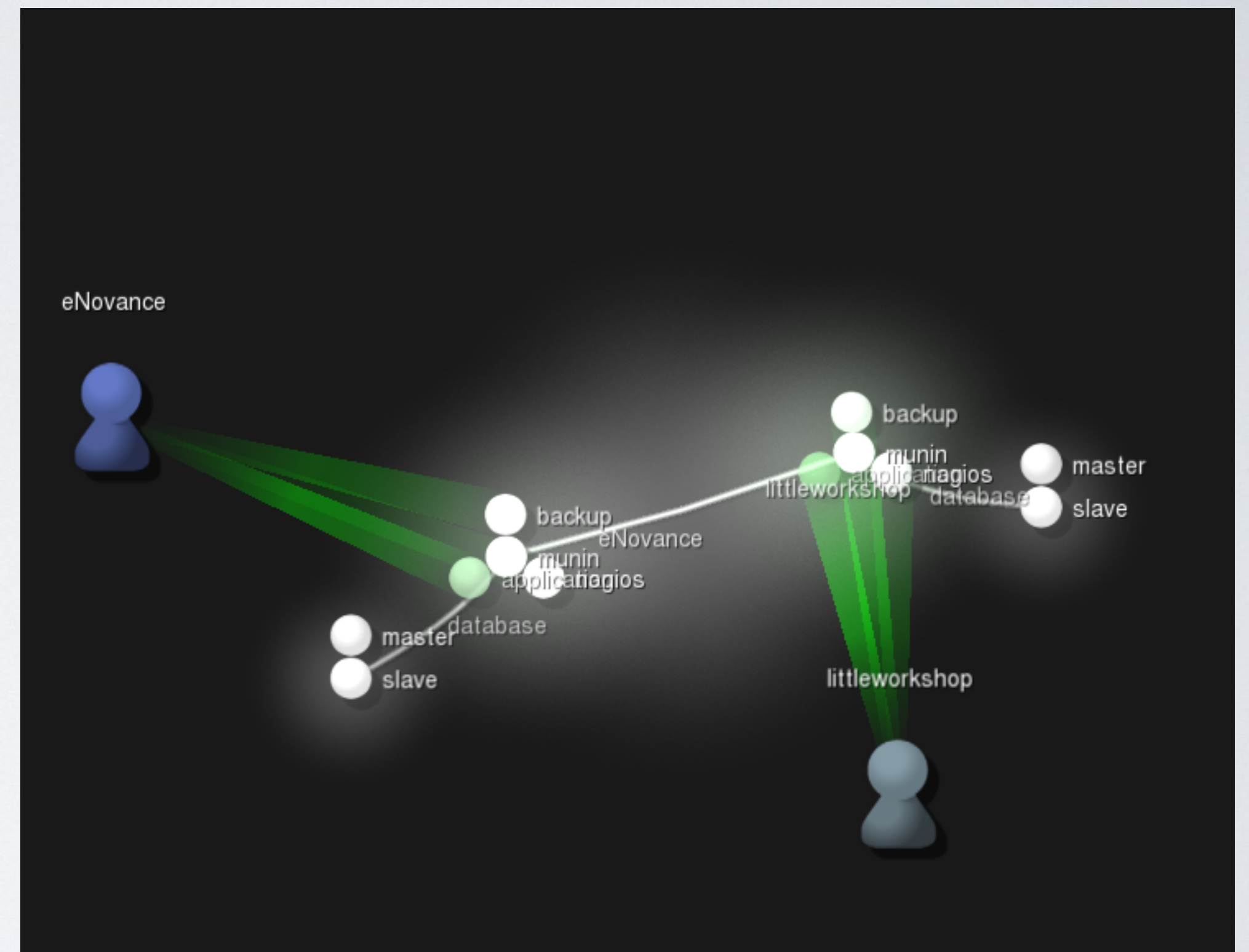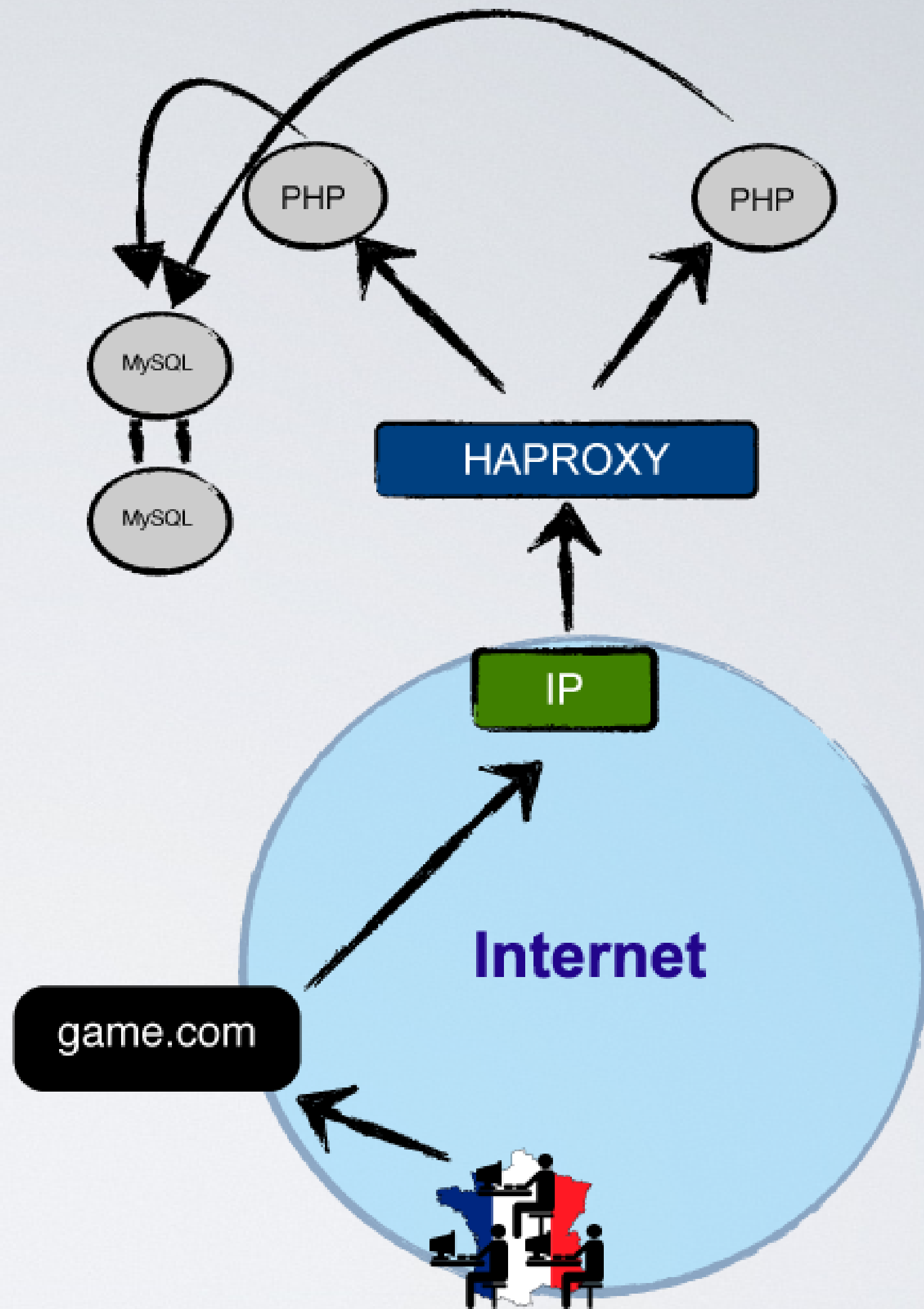
- Make a circle around the target

- Go to the next level

A web game company

The garage with a small scale architecture

The success and automated elastic scaling

Architecture

need 5 instances

PHP PHP

MySQL

MySQL

HAPROXY

IP

Internet

game.com

Create a keypair

Create Keypair   ✕

Keypair Name

loic

Description:

Keypairs are ssh credentials which are injected into images when they are launched. Creating a new key pair registers the public key and downloads the private key (a .pem file).

Protect and use the key as you would any normal ssh private key.

Cancel   Create Keypair

default   default   Edit Rule

Launch two
MySQL
Instances

Rename
primary
and
secondary

Login in the console

Ping the secondary
Using the private IP

Create Snapshot ×

Instance ID
58e95855-f4c7-4baa-9f63-e74e1d2d0610

Snapshot Name
php

Description:
Snapshots preserve the disk state of a running instance.

Cancel   Create Snapshot

PHP   PHP

MySQL

HAPROXY

MySQL

IP

Internet

game.com

Create a PHP instance

Create a snapshot

Create a second PHP instance
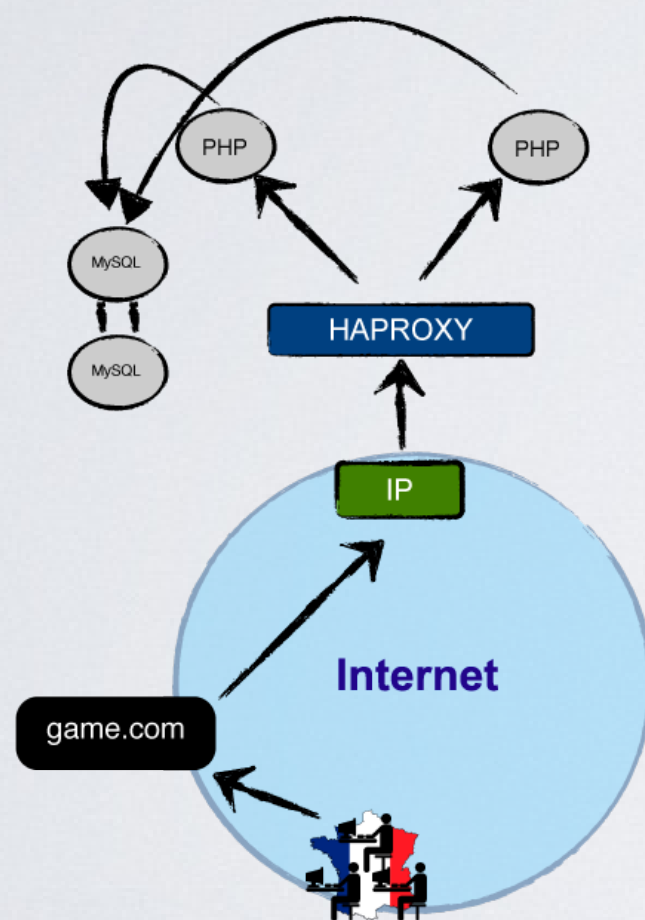
Create a HAProxy
from a snapshot

Open the port TCP 80
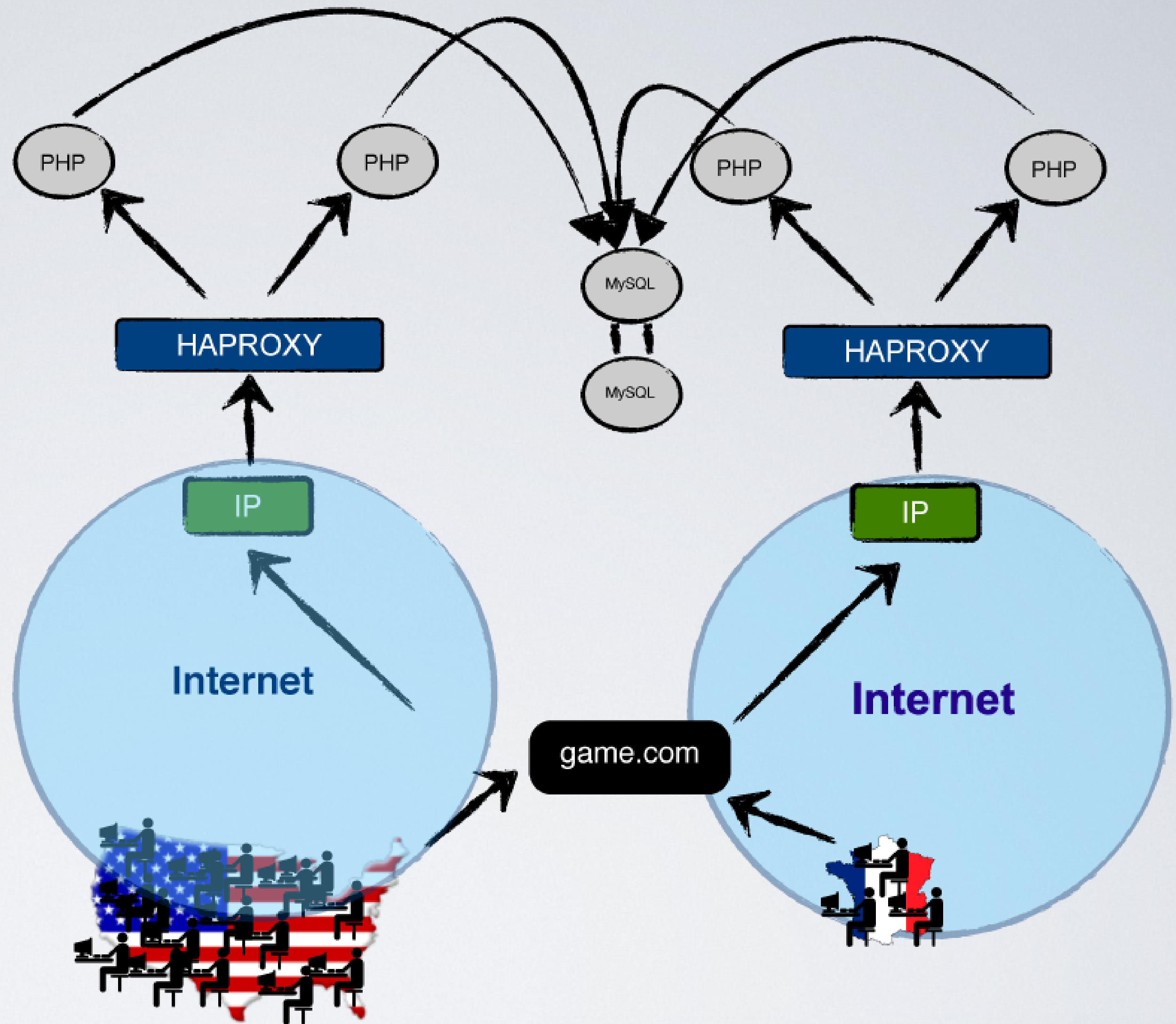to the public
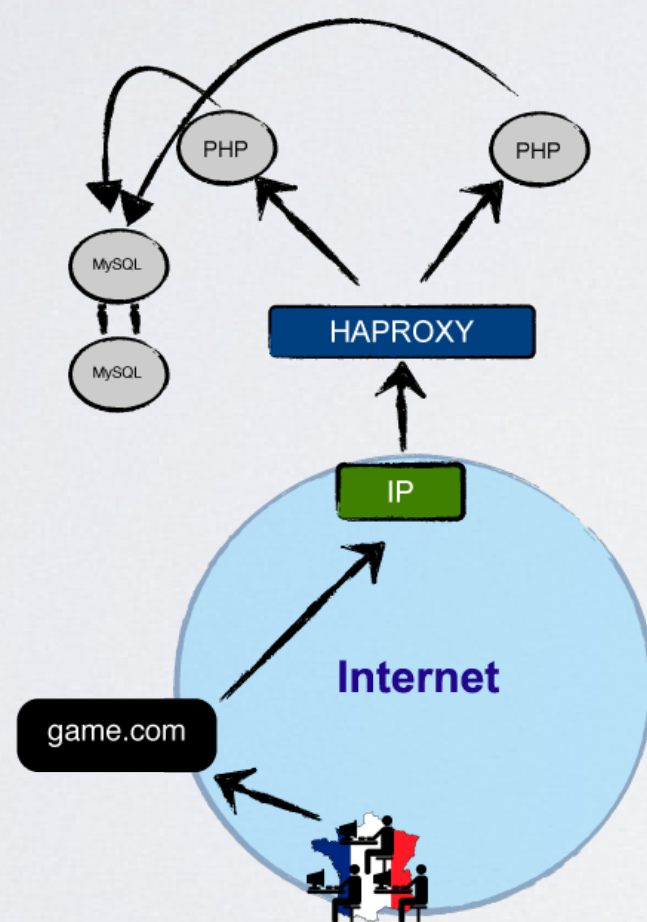
Allocate a public IP

Associate the public IP to the HAProxy instance

Worldwide Architecture

Duplicate the Infrastructure.

Multiply the php instances

Get API credentials

```
while : ; do
    requests=$(curl --silent http://$SERVER/server-status |
                perl -ne 'print $1 if(m:(\d+)\s+requests currently:)')
    servers=$(nova list --name php | grep php | wc -l)
    desired_servers=$((requests / 10 + 1))
    echo $requests requests for $servers instead of desired $desired_servers
    if (( desired_servers > servers )) ; then
        nova boot --poll --flavor 6 --image 76da9897-c9c1-4f84-b45d-108e698a8637 \
            --key_name loic php
    elif (( desired_servers < servers )) ; then
        nova delete php
    fi
    sleep 5
done
```

Add a server

Instances & Volumes

Logged in as: admin_user   Settings   Sign Out

Instances

[Launch Instance]   [Terminate Instances]

	Instance Name	IP Address	Size	Status	Task	Power State	Actions
☐	php	10.1.0.9	64MB RAM | 1 VCPU | 0 Disk	Build	Spawning	No State	Edit Instance ▾
☐	php	10.1.0.8	64MB RAM | 1 VCPU | 0 Disk	Active	None	Running	Edit Instance ▾
☐	php	10.1.0.7	64MB RAM | 1 VCPU | 0 Disk	Active	None	Running	Edit Instance ▾
☐	mysql-primary	10.1.0.5	64MB RAM | 1 VCPU | 0 Disk	Active	None	Running	Edit Instance ▾

17

Remove a server

Instances & Volumes

Instances

Launch Instance   **Terminate Instances**

	Instance Name	IP Address	Size	Status	Task	Power State	Actions
☐	php	10.1.0.8	64MB RAM | 1 VCPU | 0 Disk	Active	Deleting	Running	Edit Instance ▾
☐	php	10.1.0.7	64MB RAM | 1 VCPU | 0 Disk	Active	None	Running	Edit Instance ▾
☐	mysql-primary	10.1.0.5	64MB RAM | 1 VCPU | 0 Disk	Active	None	Running	Edit Instance ▾

OpenStack packaging team

- https://alioth.debian.org/projects/openstack/

- 7 members

- currently three active

- it needs a lot more manpower

Organisation

- irc.freenode.net#debian-openstack

- alioth mailing list

- ~20 repo
  http://anonscm.debian.org/git/git/openstack/

- git-buildpackage way of doing things

Useable Defaults

- HOWTO
  http://wiki.debian.org/OpenStackHowto

- Improve each package to reduce the Howto

- apt-get install openstack and no Howto

Puppet, chef, cfengine

- Puppet HOWTO
  http://wiki.debian.org/OpenStackPuppetHowto

- ensure the packages are friendly

- Improve the puppet modules to remove the Howto

Future

- Package 2012.2 in experimental

- Presence at FOSDEM 2013

- Presence at OpenStack summit April 2013

- How to deal with the release cycle ?

http://the.re/

- Sharing hardware between friends

- OpenStack Essex and Wheezy based

- Hardware at three different locations

- Actually using OpenStack

http://april.org/

- http://agir.april.org/projects/admins/

- Migrate from vserver to OpenStack

- Agile applied to devops

- Continuous integration of puppet manifests

Thank you

loic@debian.org

http://the.re/