



# OpenStack in Debian GNU/Linux

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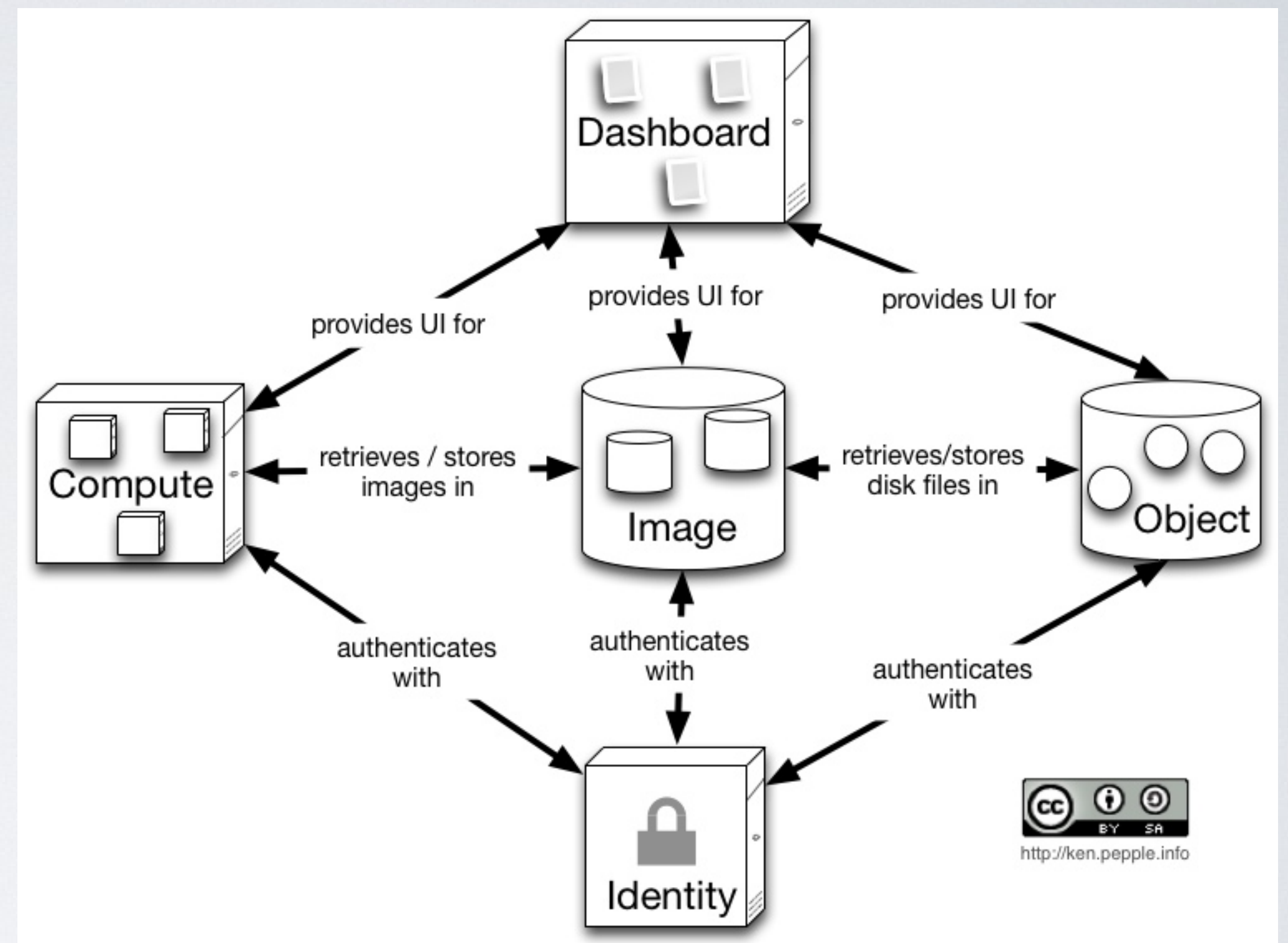
# Executive summary

- 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

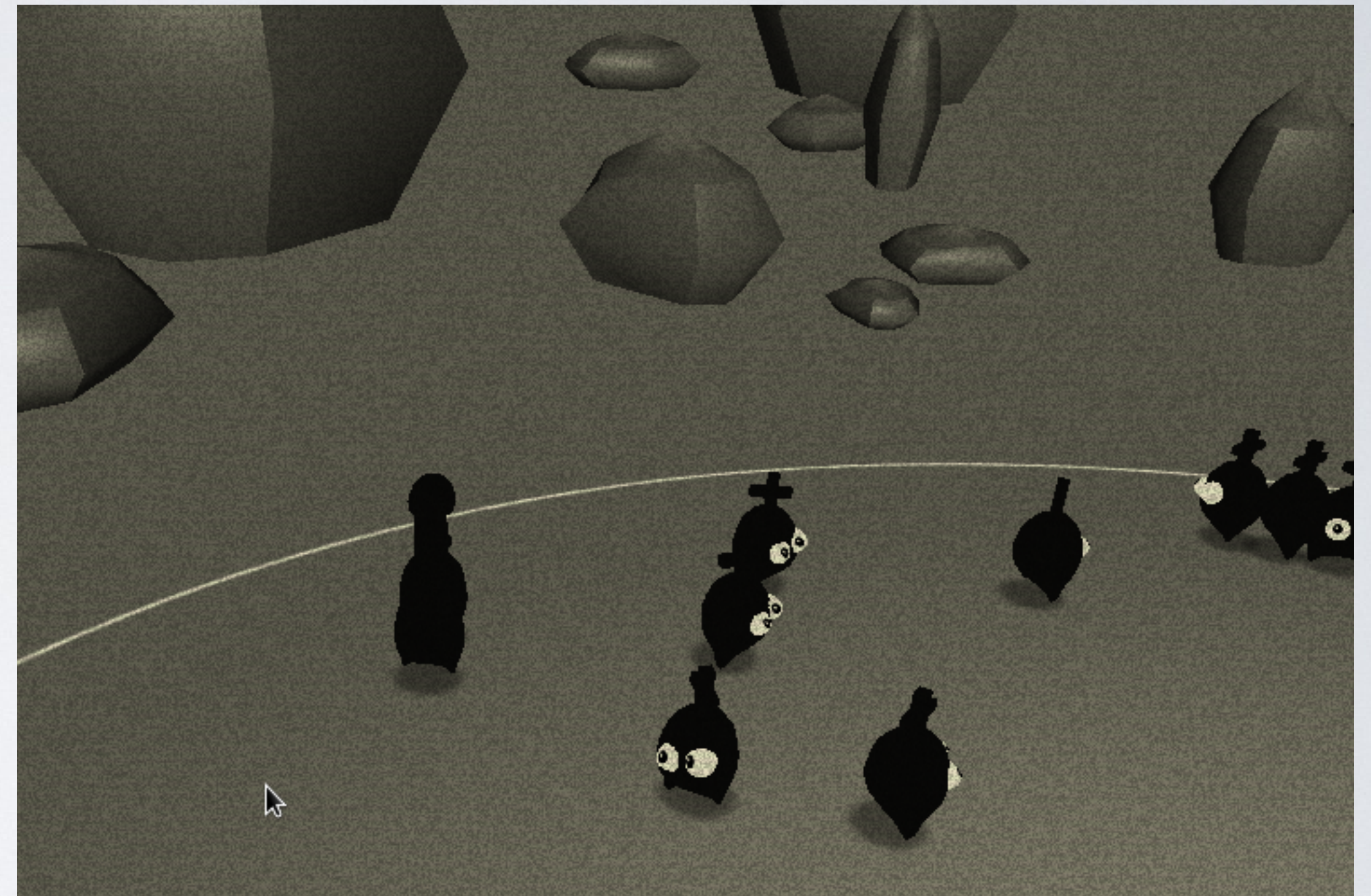
- IaaS / PaaS / SaaS
- compute
- storage
- network
- APIs





## A WebGL game

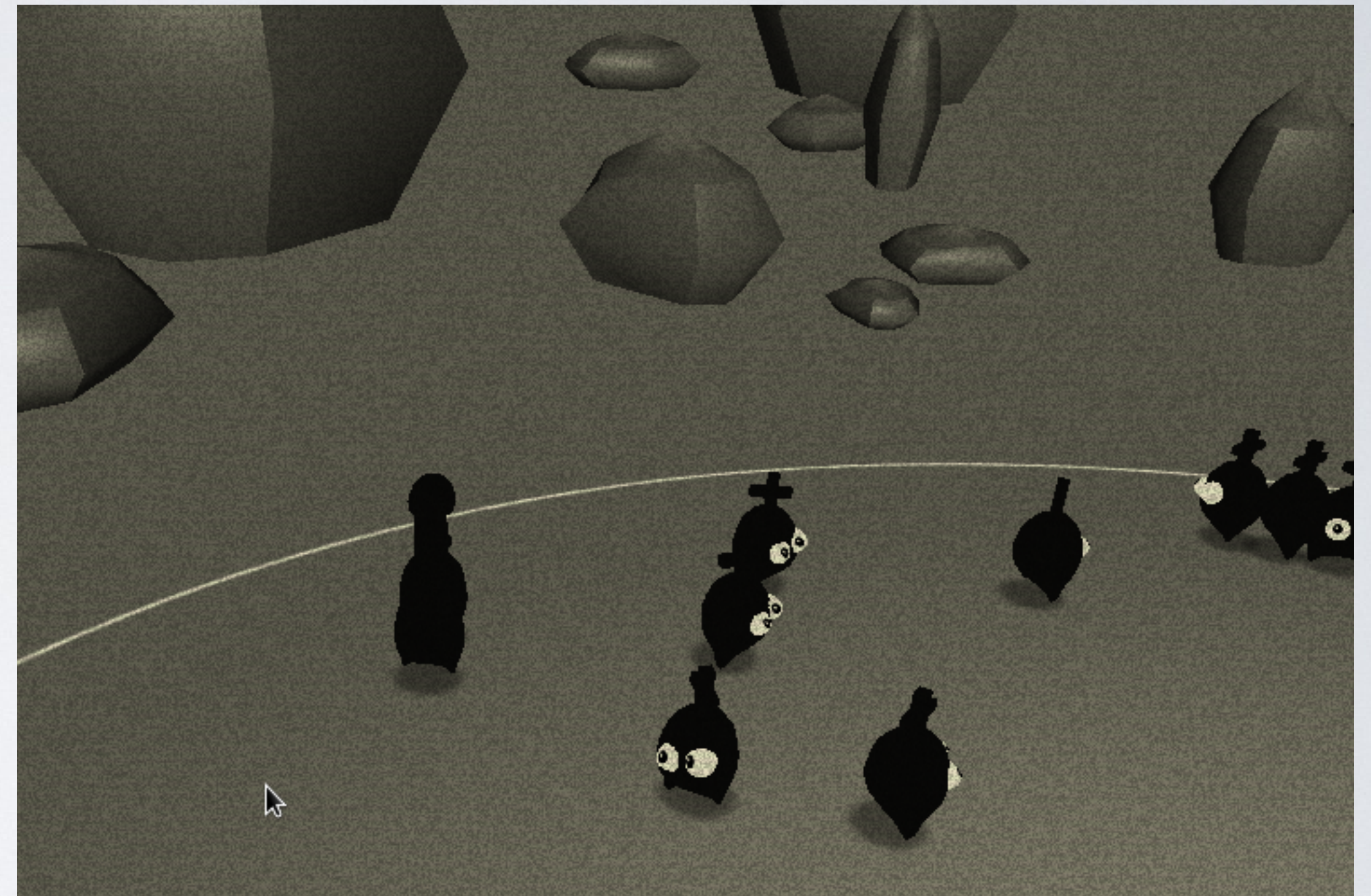
- Collect creatures
- Make a circle around the target
- Go to the next level





## A WebGL game

- Collect creatures
- Make a circle around the target
- Go to the next level



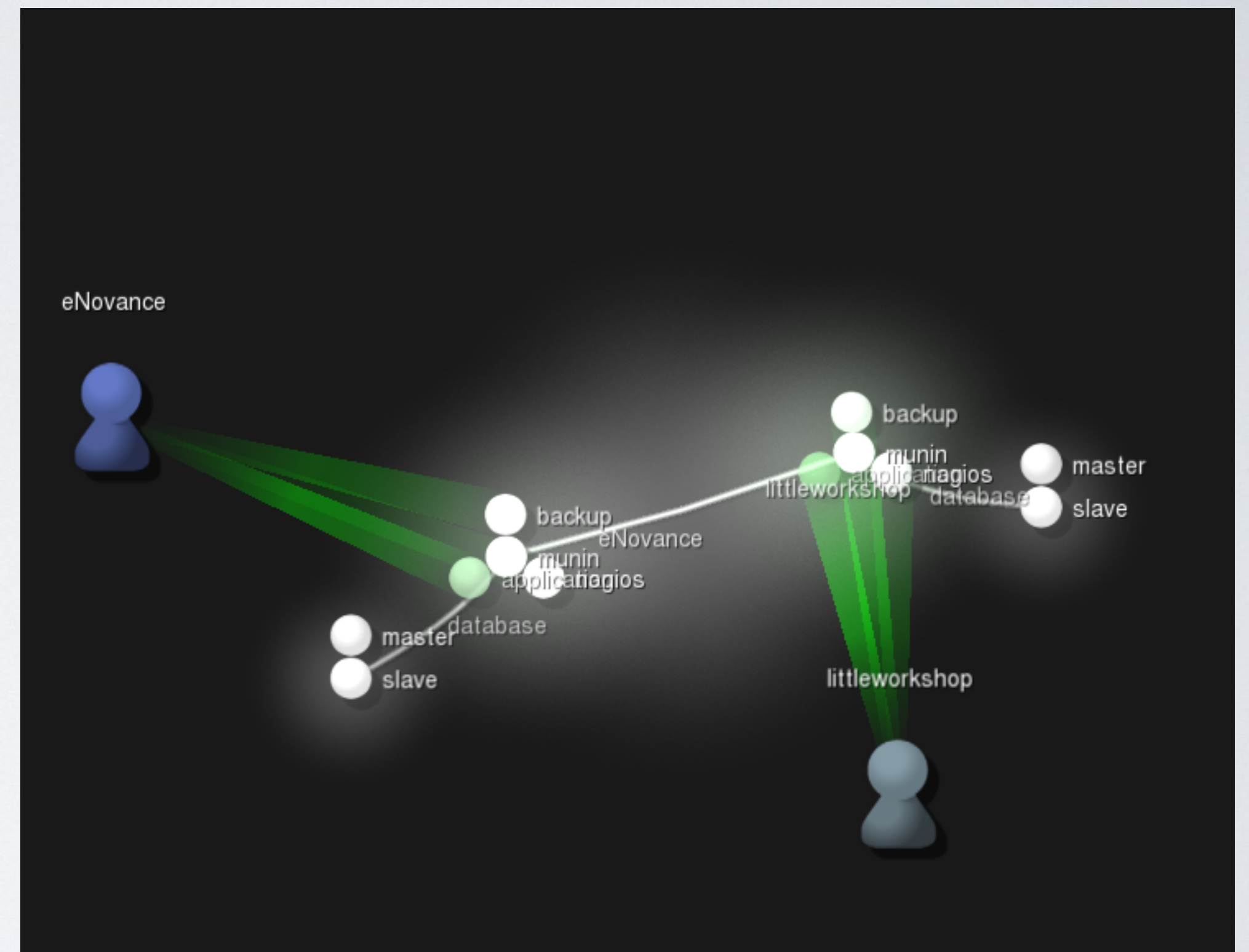




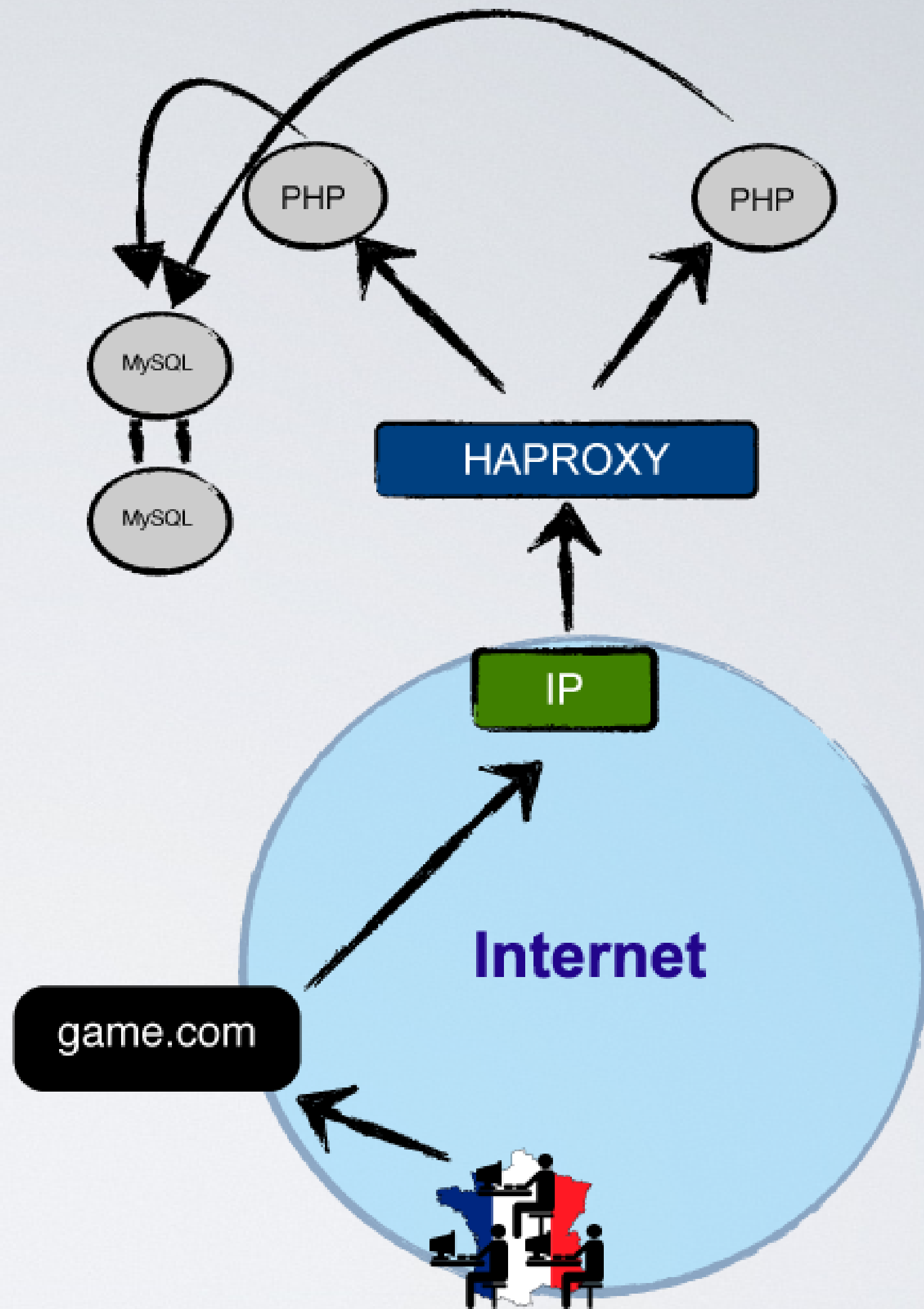
# A web game company

The garage with a small scale architecture

The success and automated elastic scaling



Architecture  
need 5 instances



# Create a keypair

## Create Keypair

Keypair Name

**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.

CancelCreate Keypair





# Launch two MySQL Instances

Rename  
primary  
and  
secondary

Launch Instances

Server Name

MySQL

User Data

Flavor

m1.pico (1VCPU / 0GB Disk / 64MB Ram )

Keypair

loic

Instance Count

1

Security Groups

☒ default

Boot From Volume

Description:

Specify the details for launching an instance. The chart below shows the resources used by this project in relation to the project's quotas.

Project Quotas

Instance Count (2)

8 Available

VCPUs (2)

18 Available

Disk (2 GB)

998 GB Available

Memory (576 MB)

50624 MB Available

Cancel

Launch Instance

9





# Login in the console

## Ping the secondary

## Using the private IP

Instance Detail: php Logged in as: admin\_user [Settings](#) [Sign Out](#)

Overview Log VNC

**Instance VNC Console**  
If VNC console is not responding to keyboard input: click the grey status bar below.

```
[ 0.619449] input: AT Translated Set 2 keyboard as /devices/platform/i8042/serio0/input/input1
[ 0.636718] Magic number: 12:915:580
[ 0.638383] rtc_cmos 00:01: setting system clock to 2012-05-23 11:35:59 UTC (1337772959)
[ 0.641396] BIOS EDD facility v0.16 2004-Jun-25, 0 devices found
[ 0.643558] EDD information not available.
[ 0.782513] Freeing unused kernel memory: 900k freed
[ 0.788678] Write protecting the kernel read-only data: 12288k
[ 0.811721] Freeing unused kernel memory: 1968k freed
[ 0.818957] Freeing unused kernel memory: 1368k freed

further output written to /dev/ttyS0
[ 1.481919] EXT3-fs (vda1): warning: checktime reached, running e2fsck is recommended
[ 1.908767] ACPI: PCI Interrupt Link [LNKC] enabled at IRQ 11

login as 'cirros' user. default password: 'cubswin:)'. use 'sudo' for root.
cirros login: cirros
Password:
Login incorrect
cirros login: cirros
Password:
$ _
```





### Create Snapshot

**Instance ID**

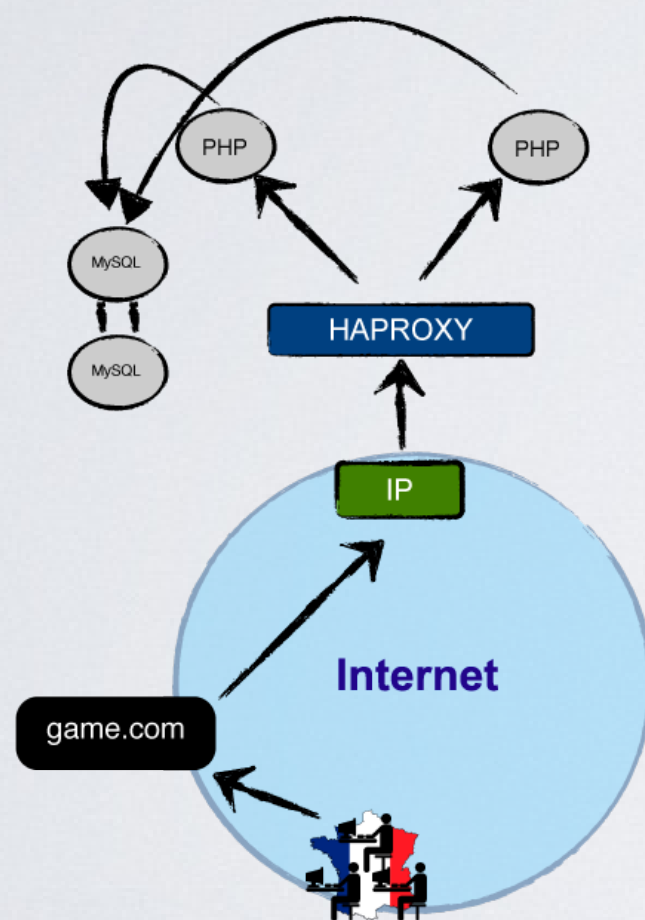
**Description:**  
Snapshots preserve the disk state of a running instance.

**Snapshot Name**

Create a PHP instance

Create a snapshot

Create a second PHP instance





### Edit Security Group Rules

Security Group Rules Delete Rules

	IP Protocol	From Port	To Port	Source	Actions
<input type="checkbox"/>	TCP	80	80	0.0.0.0/0 (CIDR)	<span>Delete Rule</span>

Displaying 1 item

#### Add Rule

IP Protocol

UDP

From Port

53

To Port

Source Group

CIDR

TCP/UDP: Enter integer value between 1 and 65535. ICMP: enter a value for ICMP code in the range (-1: 255)

Cancel

Add Rule

Create a HAProxy  
from a snapshot

Open the port TCP 80  
to the public





openstack™

### Associate Floating IP

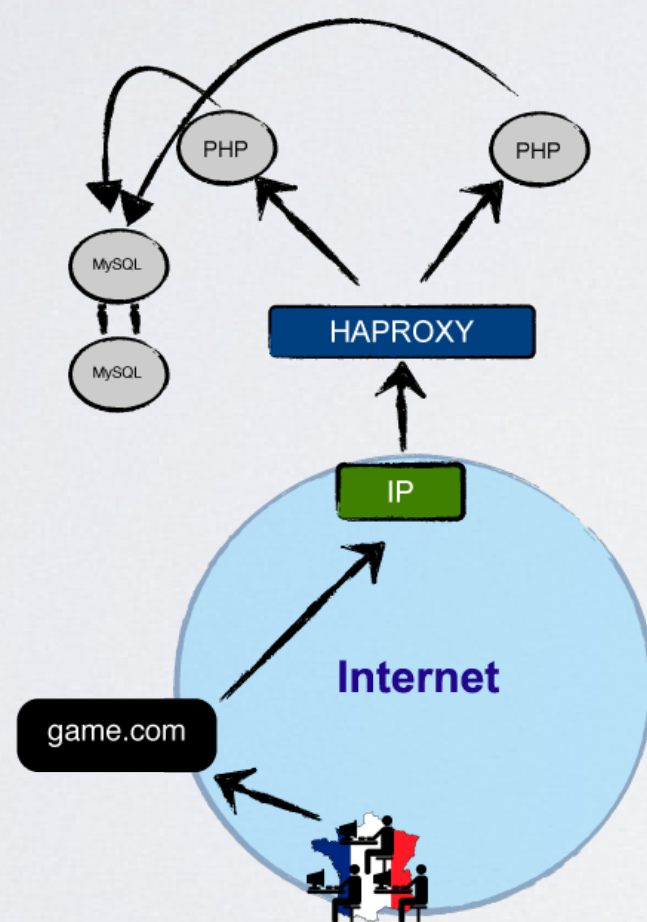
**Floating IP**  
192.168.0.226

**Description:**  
Associate a floating ip with an instance.

**Instance**  
haproxy

Cancel

Associate IP



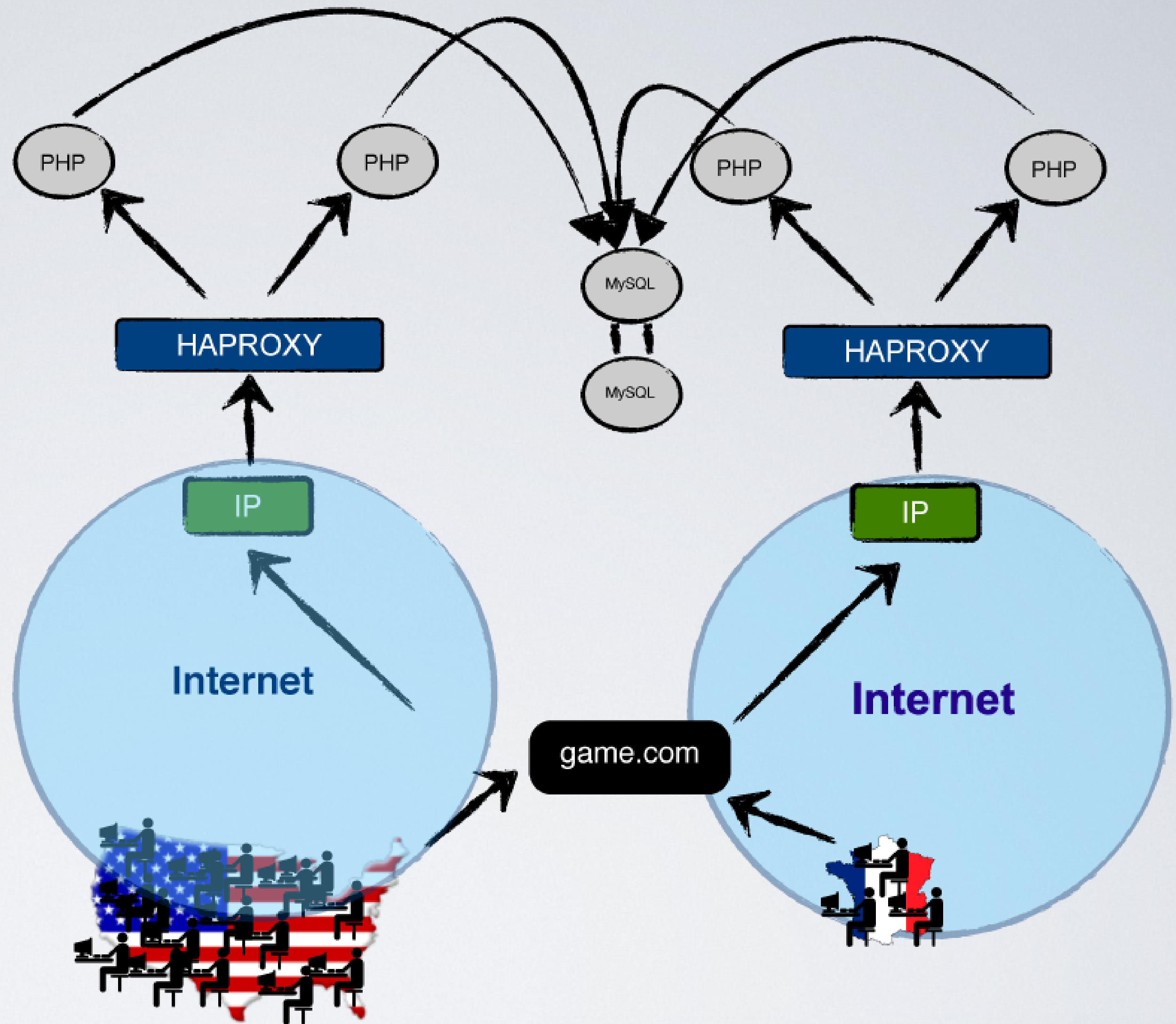
# Allocate a public IP

## Associate the public IP to the HAProxy instance

# Worldwide Architecture

Duplicate the  
Infrastructure.

Multiply the php  
instances





# Get API credentials

## Download OpenStack RC File

Logged in as: admin\_user

[Settings](#)

[Sign Out](#)

### Download OpenStack RC File

Select a Project

admin\_project



### Description:

Download the RC file for the selected project, then type "source openrc" in the terminal to configure your environment to communicate with OpenStack.

Download RC File



```
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


<input type="checkbox"/>	Instance Name	IP Address	Size	Status	Task	Power State	Actions
<input type="checkbox"/>	php	10.1.0.9	64MB RAM   1 VCPU   0 Disk	 Build	 Spawning	No State	<button>Edit Instance</button> 
<input type="checkbox"/>	php	10.1.0.8	64MB RAM   1 VCPU   0 Disk	Active	None	Running	<button>Edit Instance</button> 
<input type="checkbox"/>	php	10.1.0.7	64MB RAM   1 VCPU   0 Disk	Active	None	Running	<button>Edit Instance</button> 
<input type="checkbox"/>	mysql-primary	10.1.0.5	64MB RAM   1 VCPU   0 Disk	Active	None	Running	<button>Edit Instance</button> 

# Remove a server

Instances & Volumes Logged in as: admin\_user [Settings](#) [Sign Out](#)

Instances

Launch InstanceTerminate Instances

<input type="checkbox"/>	Instance Name	IP Address	Size	Status	Task	Power State	Actions
<input type="checkbox"/>	php	10.1.0.8	64MB RAM   1 VCPU   0 Disk	Active	 Deleting	Running	<button>Edit Instance</button> ▼
<input type="checkbox"/>	php	10.1.0.7	64MB RAM   1 VCPU   0 Disk	Active	None	Running	<button>Edit Instance</button> ▼
<input type="checkbox"/>	mysql-primary	10.1.0.5	64MB RAM   1 VCPU   0 Disk	Active	None	Running	<button>Edit Instance</button> ▼





## 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



- 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 vservers to OpenStack
- Agile applied to devops
- Continuous integration of puppet manifests



Thank you

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<http://the.re/>