

How to deploy docker containers inside ikoula's cloud with Ansible

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Who is ikoula ?

Creation : 1998

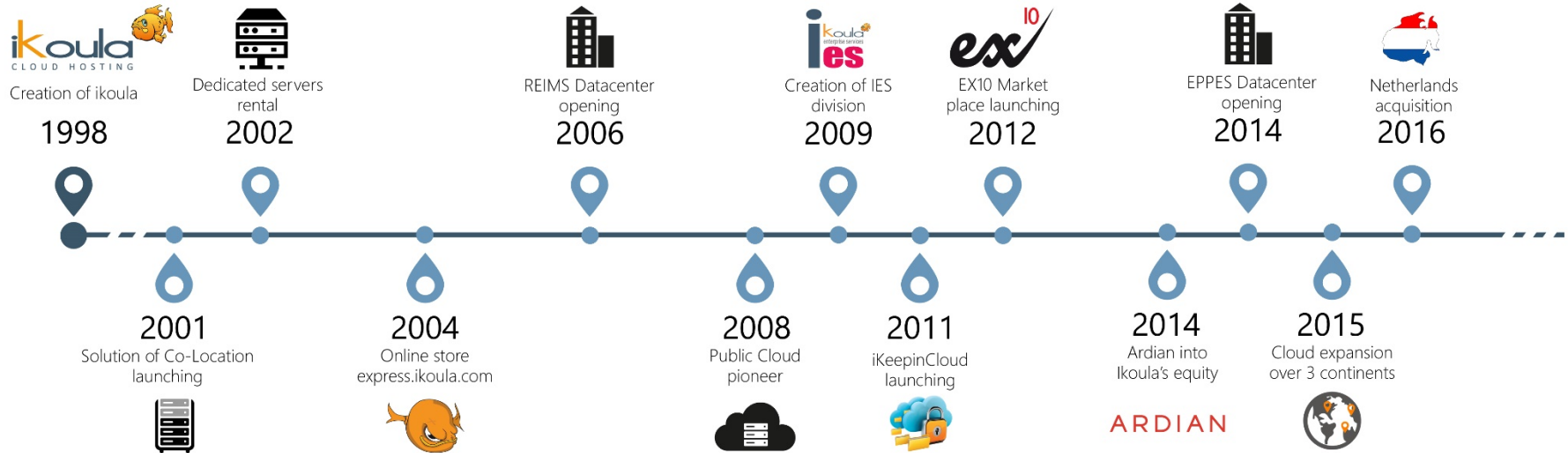
Employees : 47

8 000 OS in
production

2 datacenters owned
in France & present
on 3 continents

5 000 physical
servers

Some history



Ikoula's cloud
powered by cloudstack

6 datacenters, 3 continents



United States

US - Floride



Europe

FR - Reims

FR - Laon

DE - Francfort

NL - Amsterdam



Asia

SG - Singapour

Ikoula's cloud



Flexibility &
Elasticity



Cloud
Public / Private / Hybrid



Multi-zones



SSD hard drives


















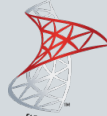


API



Web UI

Ikoula's cloud

Work with any technologies

WEB	DEVOPS	BIG DATA	BDD
CACHE  APACHE HTTP SERVER	SEARCH  git	 hadoop	 VARNISH SOFTWARE
 NGINX	 docker	 cassandra	 MariaDB
 LIGHTTPD fly light.	 CHEF™ CODE CAN	 PostgreSQL	 PERCONA
	 ANSIBLE	 mongoDB	 MEMCACHED
		 Microsoft SQL Server	 Solr
			 elastic

Deploy your apps

 node.js	 Magento™	 Drupal™	 hybris	 Joomla!™	 Symfony	 WORDPRESS	 PrestaShop
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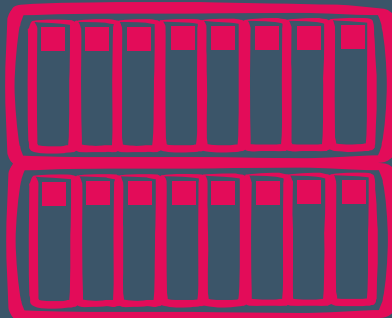
Cloudstack API



Infrastructre deployment



Application deployment



Scale on your needs



Control your data

Ansible

Simple IT automation

Ansible inventory

```
localhost
```

```
[ikcloud]
```

```
#ceevm[01:02]
```

```
ceevm01 ansible_host=178.170.68.70
```

```
ceevm02 ansible_host=178.170.68.69
```

```
[ikcloud:vars]
```

```
cs_template=Debian 8 - Minimal - 64bits
```

```
cs_offering=t1.pico
```

```
cs_zone=EU-FR-IKDC1-Z3-BASIC
```

```
cs_securitygroups=default
```

Describe your
infrastructure

Ansible cloudstack module

- Require Exoscale python cs library
- Available as Ansible extra modules
- Your credentials into cloudstack.ini file

```
[cloudstack]
endpoint = https://cloudstack.ikoula.com/client/api
key =
secret =
```

Ansible playbooks

```
main.yml — docker-wordpress\tasks
1 ---
2 - name: create and run VM(s)
3   cs_instance:
4     name: "{{ inventory_hostname_short }}"
5     template: "{{ cs_template }}"
6     zone: "{{ cs_zone }}"
7     service_offering: "{{ cs_offering }}"
8     security_groups: "{{ cs_securitygroups }}"
9     ssh_key: thatKey
10    state: started
11    register: vm
12
13 - name: print VM infos
14   debug: msg="VM {{ vm.name }} {{ vm.default_ip }}"
15
16 - name: assing IP to the inventory
17   set_fact: ansible_ssh_host="{{ vm.default_ip }}"
18
19 - name: waiting for SSH to come up
20   wait_for: port=22 host="{{ vm.default_ip }}" delay=5
```

main.yml — cs-deploy\tasks

Docker

Build, ship, run

Deploy containers inside your playbook

```
---  
- name: mariadb container  
  docker:  
    name: mariadb  
    image: mariadb:5  
    state: started  
    volumes:  
      - /home/wp/db:/var/lib/mysql  
    env:  
      MYSQL_ROOT_PASSWORD: djMucnRen5G5
```

Using Ansible's
docker module

Deploy containers with docker-compose

```
---  
- name: copy compose file  
  template: src={{ item.src }} dest={{ item.dest }}  
  with_items:  
    - { src: 'wordpress.yml.j2', dest: '/root/wordpress.yml' }  
  
- name: launch containers  
  command: docker-compose -f {{ item }} up  
  with_items:  
    - /root/wordpress.yml
```

The same way, you'll do from your console

Docker-compose

wordpress:

image: wordpress

links:

- db:mysql

ports:

- 80:80

db:

image: mariadb

environment:

MYSQL_ROOT_PASSWORD: root

RUN

```
# ansible-playbook wordpress.yml
```

```
PLAY *****
```

```
TASK [setup] *****
```

```
ok: [wp-vm1]
```

```
TASK [abaez.docker : Install docker and dependencies] *****
```

```
included: /etc/ansible/roles/abaez.docker/tasks/os_family/Debian.yml for wp-vm1
```

```
(...)
```

```
TASK [docker-wordpress : mariadb container] *****
```

```
changed: [wp-vm1]
```

```
TASK [docker-wordpress : wordpress container] *****
```

```
changed: [wp-vm1]
```

```
PLAYRECAP *****
```

```
wp-vm1 : ok=14 changed=10 unreachable=0 failed=0
```

What next ?

Improvements

- **Dynamic inventory**
a python script can give a dynamic inventory directly connected to the cloudstack platform
- **Connect instances to your favorite docker cluster manager**
- **Writing more playbooks**

Ressources

- <http://docs.ansible.com/ansible/index.html>
- <https://docs.docker.com/engine/>
- <https://github.com/trotro/ansible-scripts>
- <https://github.com/ikoula>
- <https://express.ikoula.com/en/public-cloud>
- <https://www.ikoula-blog.com>
- <https://en.ikoula.wiki/>

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Reims (51), France

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jobs@ikoula.com

<https://www.ikoula.com/en/emploi>

Gardez le contact !



@ikoula ou @ikoula_EN



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