ZABBIX in the cloud

From 10 standalone Zabbix platforms to a major one in the cloud.

Zabbix-Summit 2019 – 11/12 october

Excellence as a Service

The story begins for me in 3DS Outscale

2014 My job interview	3DS Outscale	My first weeks
• ”What will you do during your first weeks ?”	• Dassault Systèmes IaaS Cloud Provider • Several datacenters around the world • Tons of equipments, VMs, expert workers	• Let’s focus on the monitoring subject!

First steps with Zabbix

- Several Zabbix Servers
- 1 Datacenter:
  - 1 Zabbix-Server + Frontend
  - 1 PostgreSQL Database

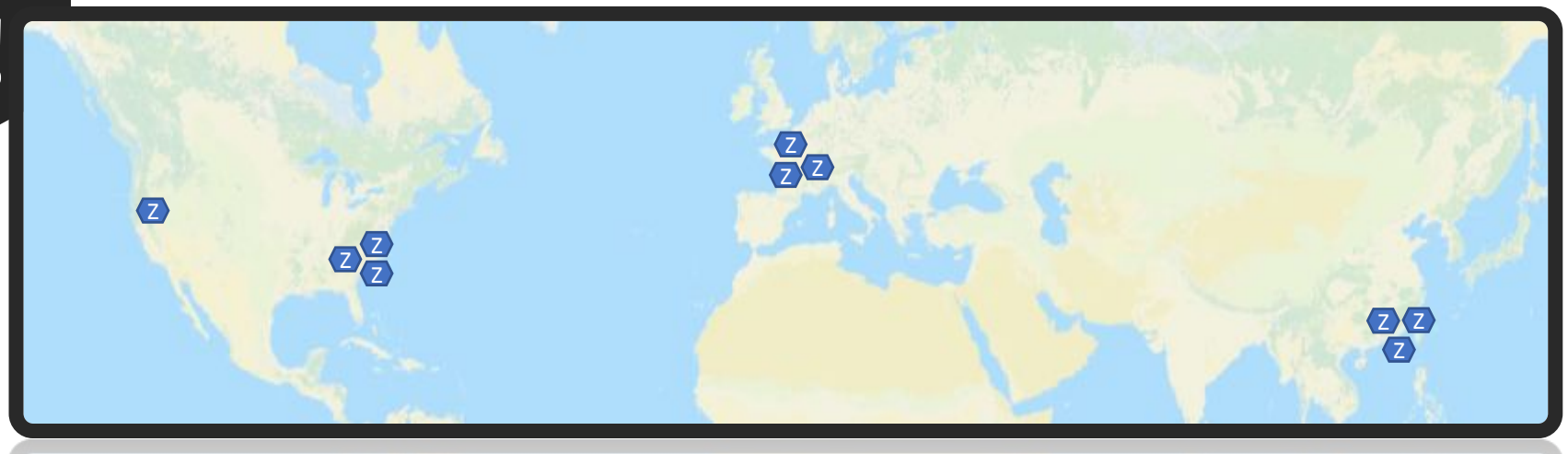
What was my first year like ?

My daily work:

- Zabbix Configuration
- Zabbix templating
- Scripting for UserParameters
- Reworked the alerting
- Dashboarding using Ruby / Dashing

I soon became the monitoring guy.

Multiple Zabbix platforms everywhere!



Zabbix Server + Frontends

+

Zabbix DB

X 10+

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Not totally satisfied

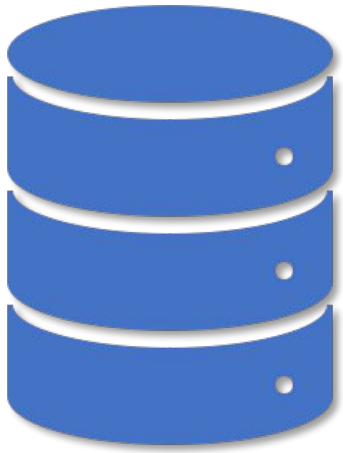
Minor issues:

- Configuration management
- Template deployment
- Dogfooding

Major issues:

- Performance
- Resilience

The Zabbix-Cloud project was born…



- Create a better Zabbix Platform with :
  - Performance
  - Resilience
  - Convenient to use for the teams

I started by requesting politely…

A Zabbix Training

- And became certified

A small team

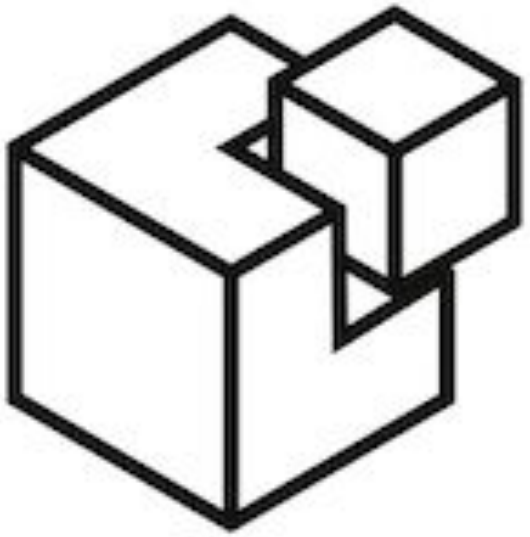
- That’s when Kévin, Kévin and Romain joined me.

The monitoring team.

Manages the monitoring platforms.

Provide the monitoring work requested by the other teams.

Work on various projects.

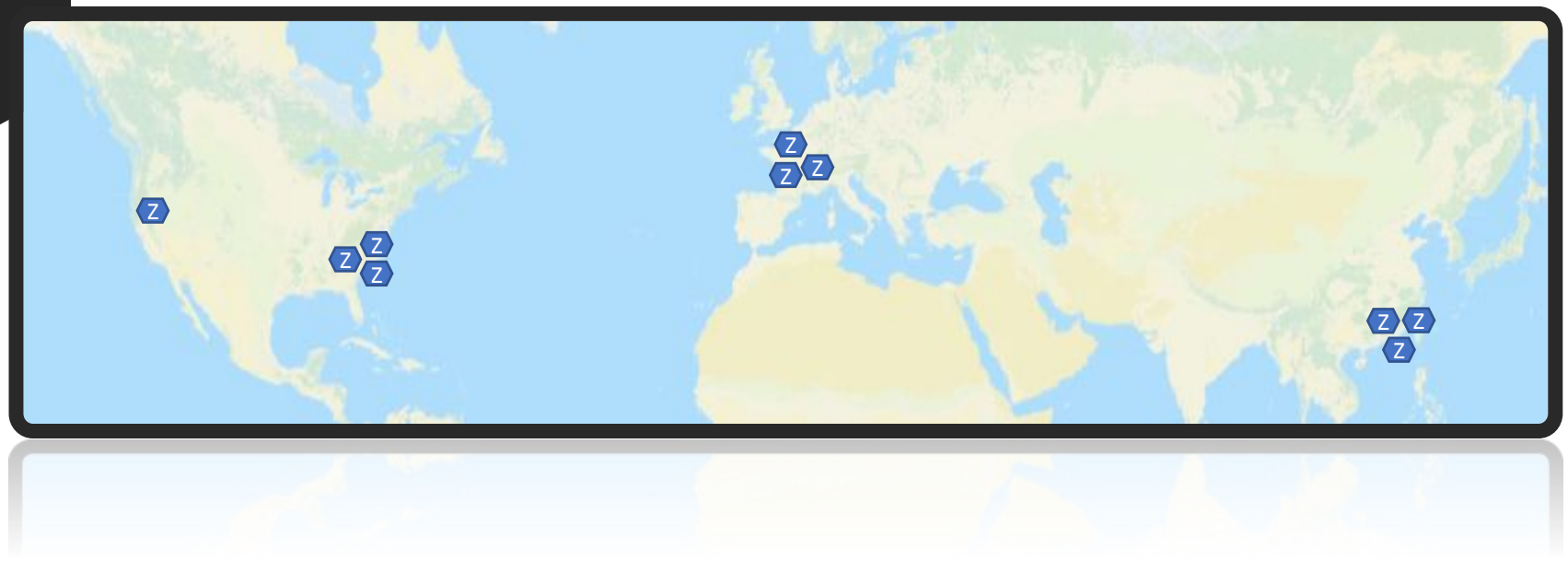


SALTSTACK

Our toolkit!

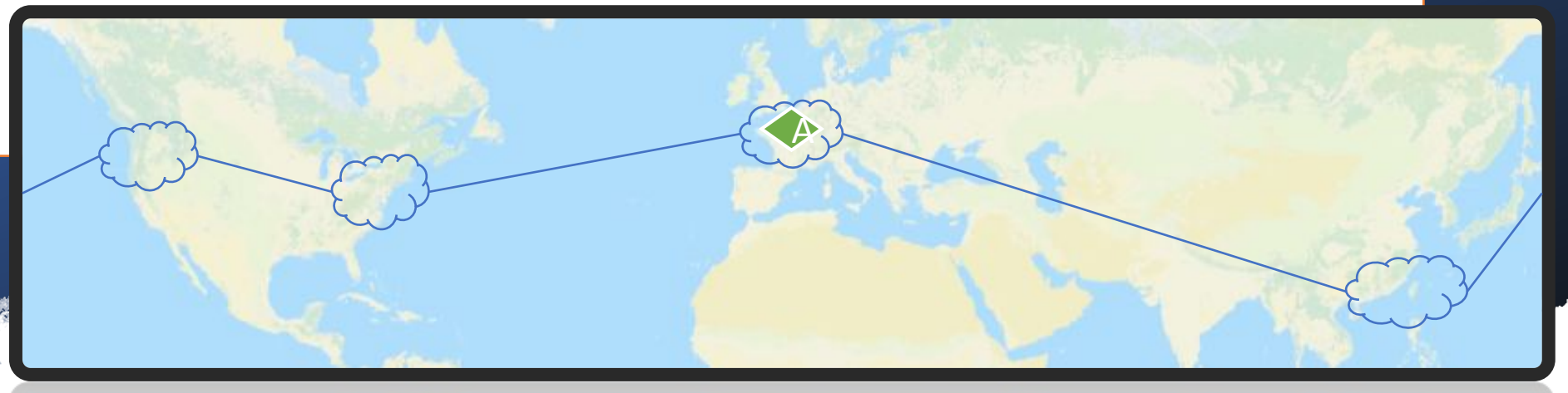
- Saltstack
- Salt-cloud
- Git
- Backup tools
- Cloud accounts to request the API

We kept our old Zabbix platforms.



For the moment, they will survive.

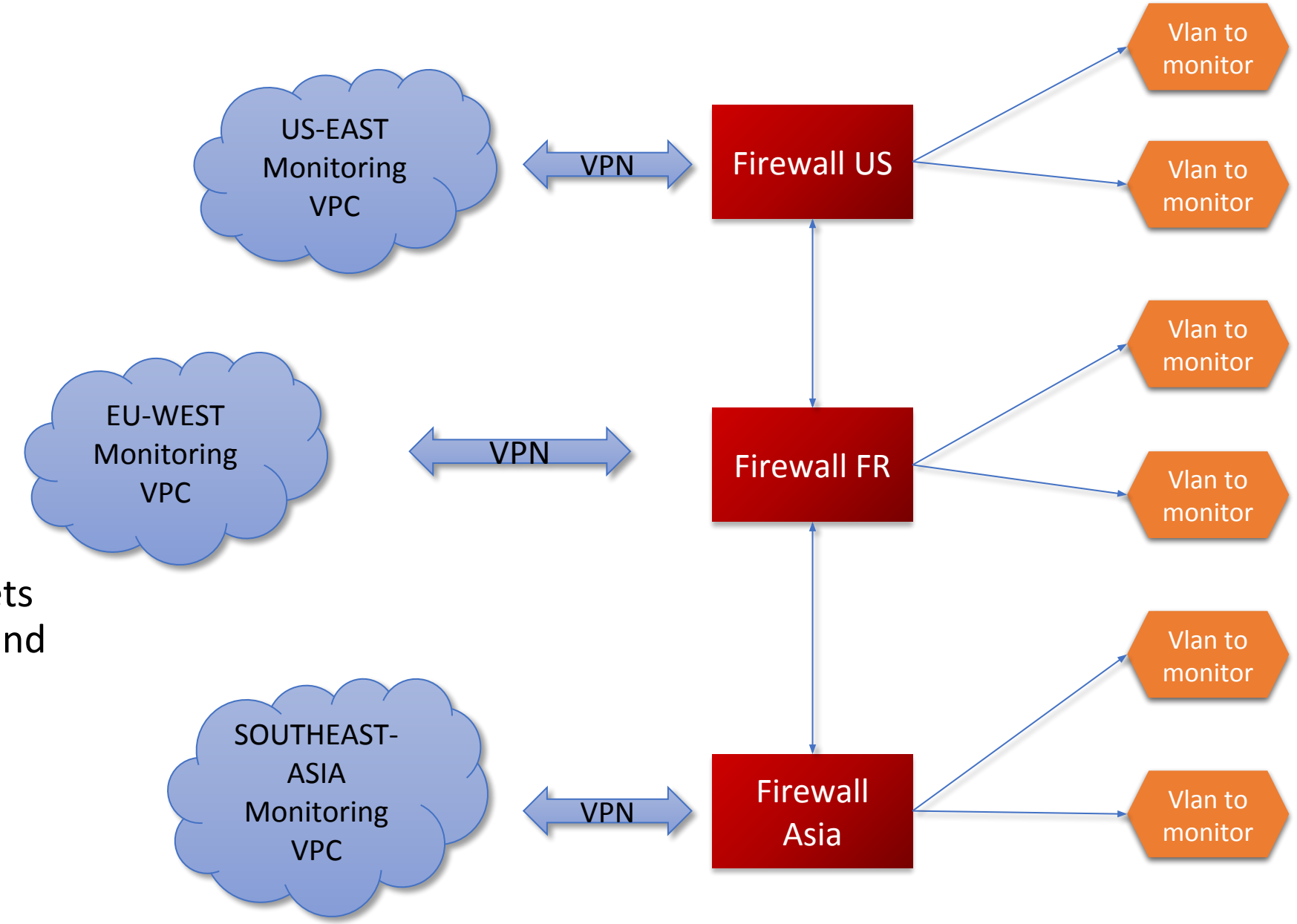
- We deployed the ADM in the EUW2 Region
- Deployed our toolkit
- Started writing Salt states and cloud infrastructure configuration



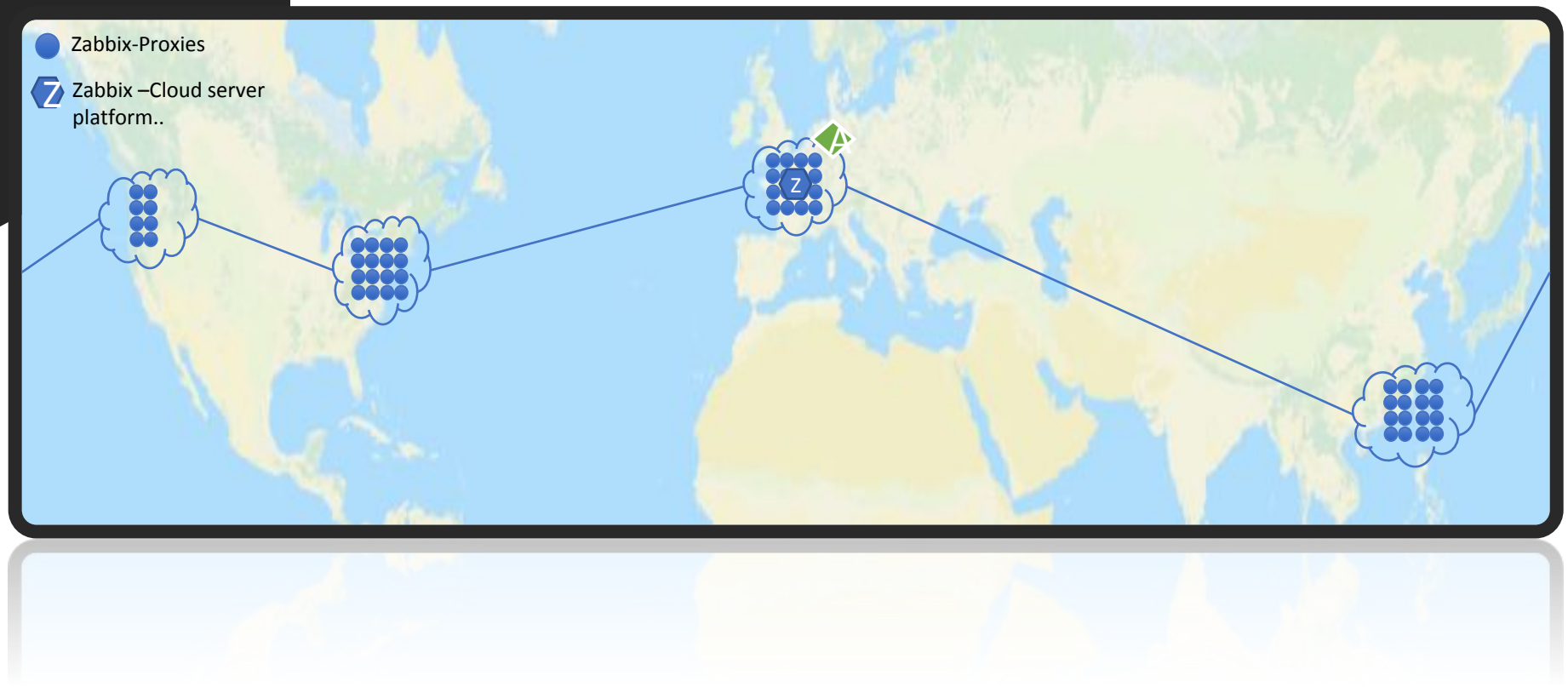
We then created our first instance: “The Adm”

The Monitoring VPCs

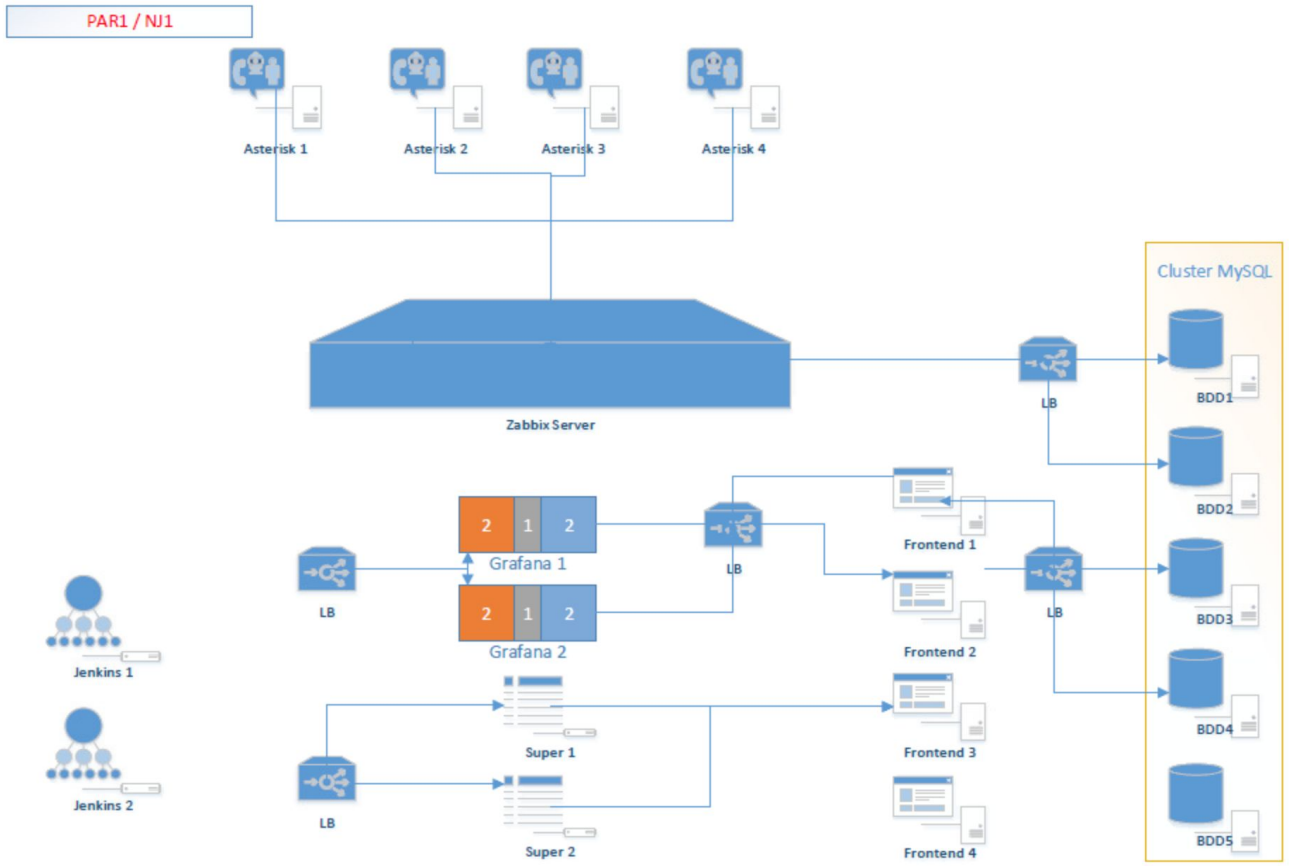
Connectivity to private subnets with production equipment and vms.



A few months later…



Remember the small architecture ? Here is what it looks like now !


PAR1 / NJ1
Asterisk 1
Asterisk 2
Asterisk 3
Asterisk 4
Zabbix Server
Cluster MySQL
LB
BDD1
BDD2
BDD3
BDD4
BDD5
Frontend 1
Frontend 2
Frontend 3
Frontend 4
2
1
2
Grafana 1
Grafana 2
Jenkins 1
Jenkins 2
Super 1
Super 2

Add 2 hundred proxies

Collecting data everywhere

Sending them to the Zabbix-Server

(Poor config syncer !)

Tips for better performance

Specific to Zabbix

- Active items
- Proxies – Active too –
- Internal process monitoring

Database

- DB partitioning and Tuning
- High IOPS volumes for the DB
- Strong CPU
- Massive ram for InnoDB cache

Tips for resilience

Multiple frontends

Multiple DB nodes

Multiple Asterisk

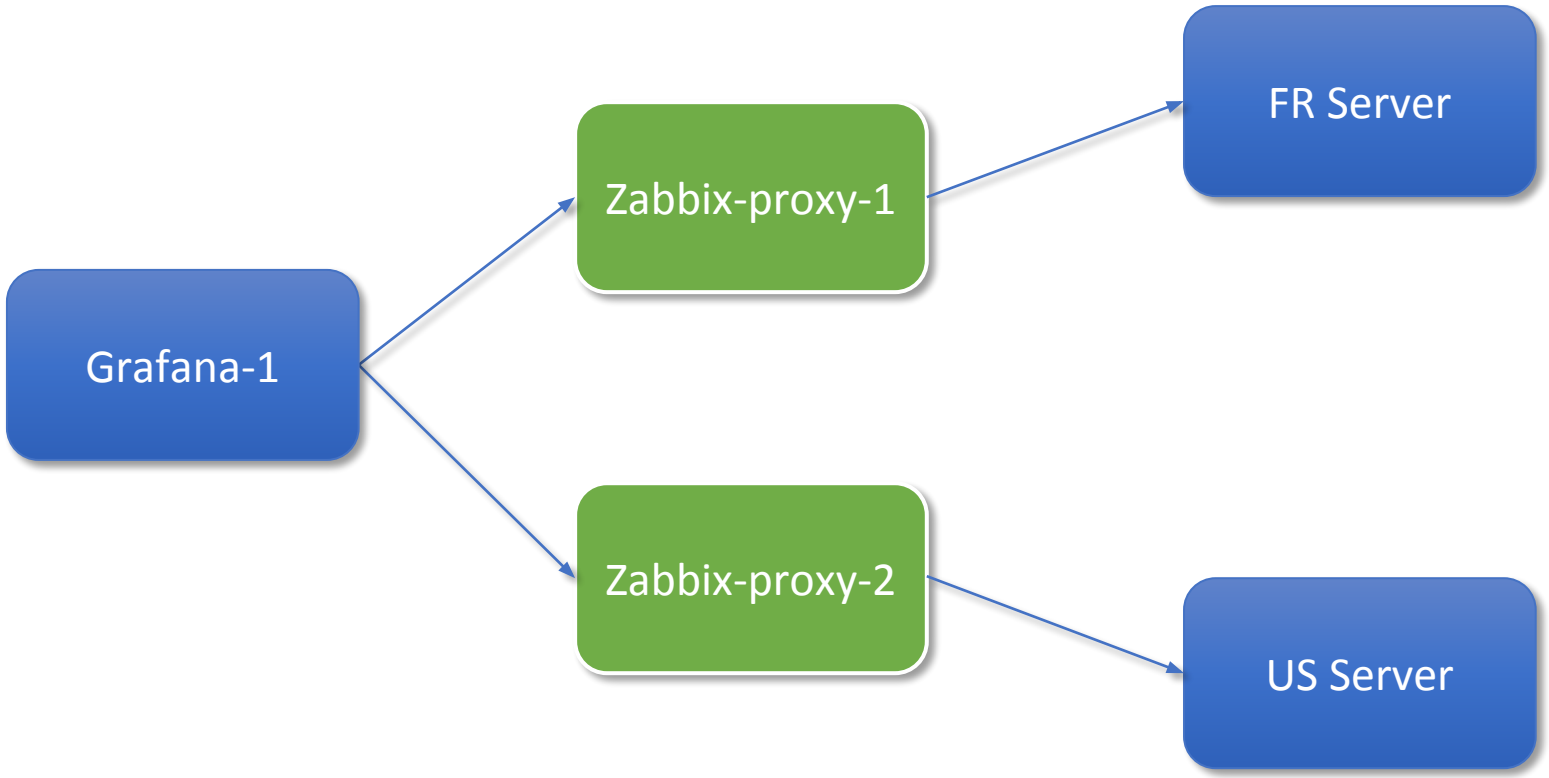
LBs

Send ALL your monitoring data twice, to multiple platforms!

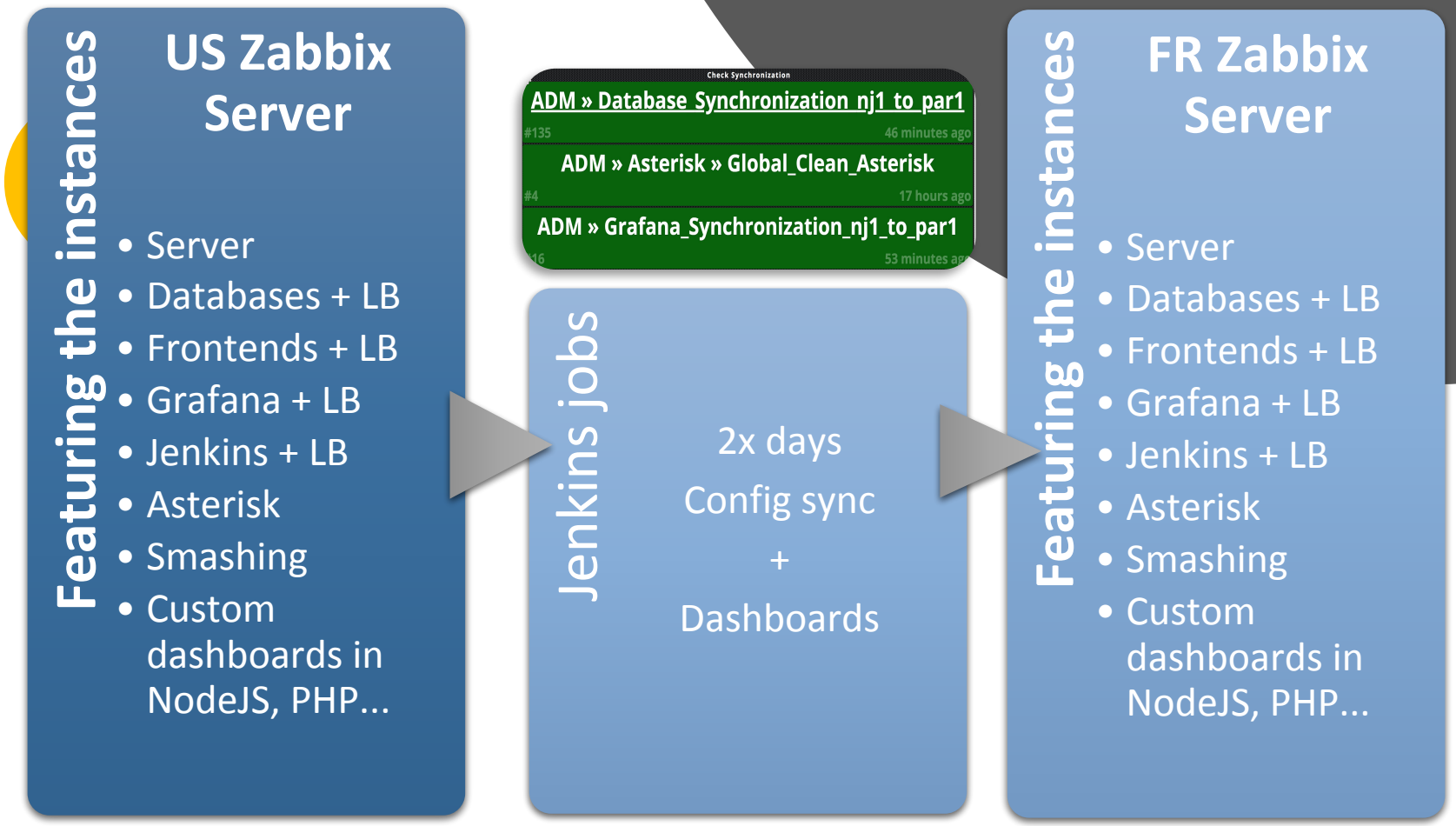
Two Zabbix-cloud platforms

Every Zabbix Agent have 2 proxies in *ServerActive=*

Both monitoring platforms operating a the same time



Twin monitoring platforms



How is the configuration sync done?

MySQL dump

- Configuration tables.

Copy the dump

- To a node of the other Zabbix platform.

Stop everything that queries the DB

Restore the table in parallel

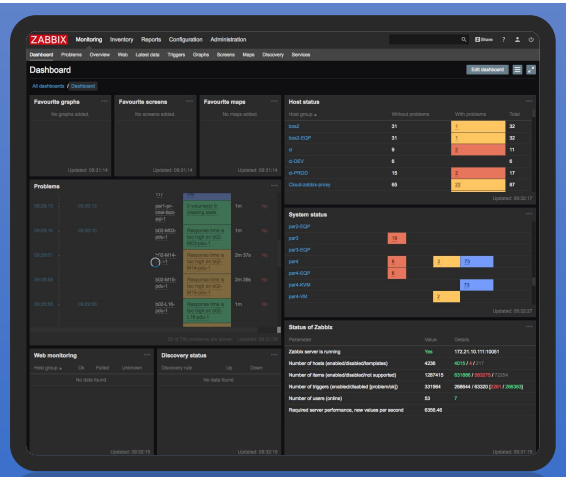
Restart everything

- Server, frontends, Grafana…

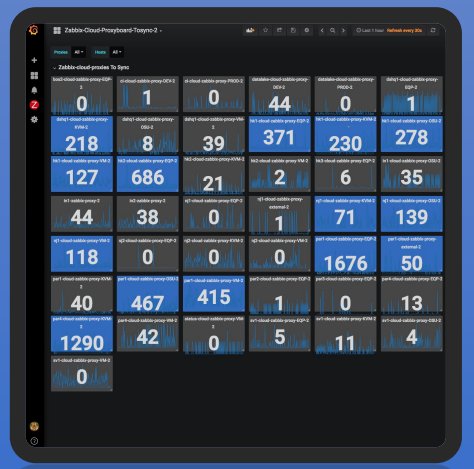
Pack everything in an orchestration state

- Play it regularly through a Jenkins state.
- We do it 2x a day.
- It failed 2 times in 2 years.
- Name your -1 and -2 proxies with the same proxy name.

Simplicity benefits



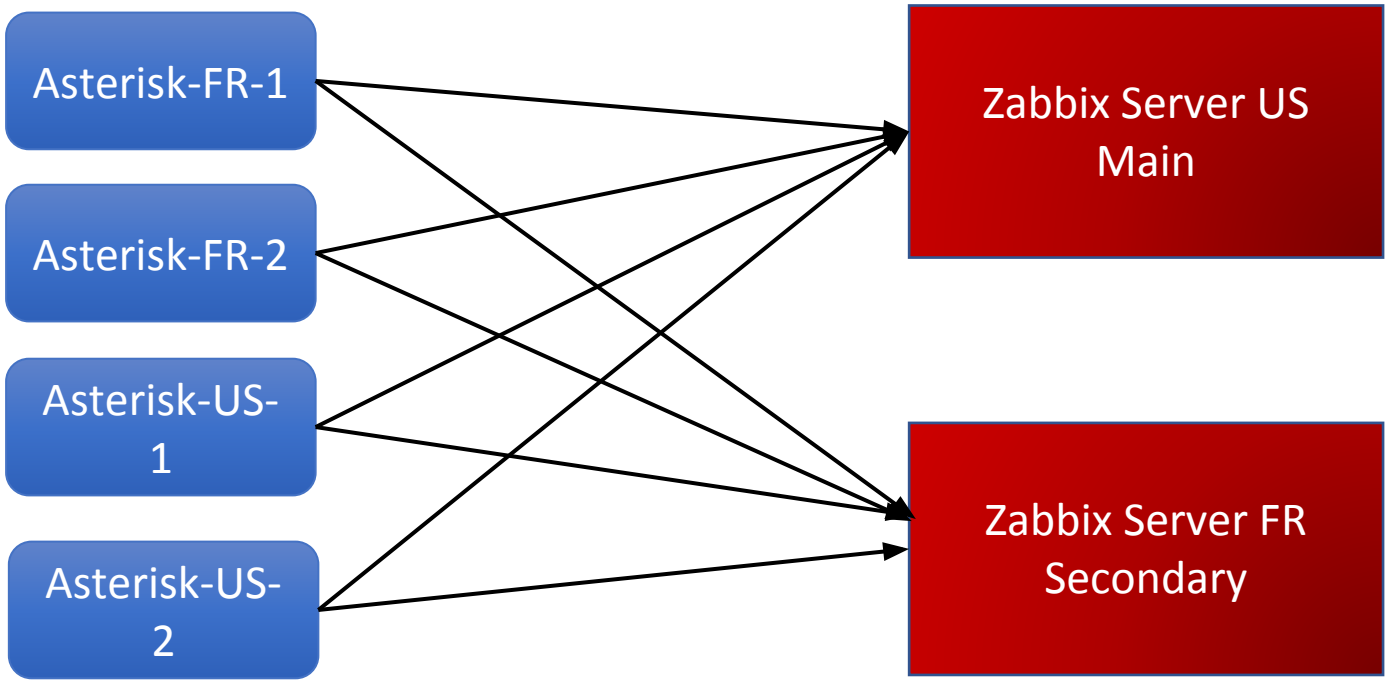
A single Zabbix interface.
Fast updates and configuration.
Single API



Grafana Dashboards

- Our users can check their data.
- Build their dashboards.
- With no access to Zabbix.

Firing alerts… avoiding x2 calls



Where we are in summer 2019

Availability	Max processed values /s	Items	Proxies deployed	AVG processed values
100%	250 000 during a burst.	1 300 000 active	160+	10000
AVG Bandwith on server	**Max tested processed alerts**	**Amount of TV using Grafana dashboards**	**Charge on the server**	**DB size**
35 mbps	Up to 30k	200+	Around 5%	1500 GB

And about the old Zabbix Platforms?

- Audited
- Extracted the templates and items
- Abandoned
- Deleted

Daily mission : Monitoring the monitoring platforms

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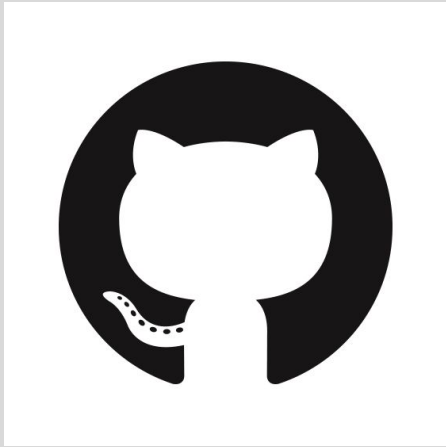
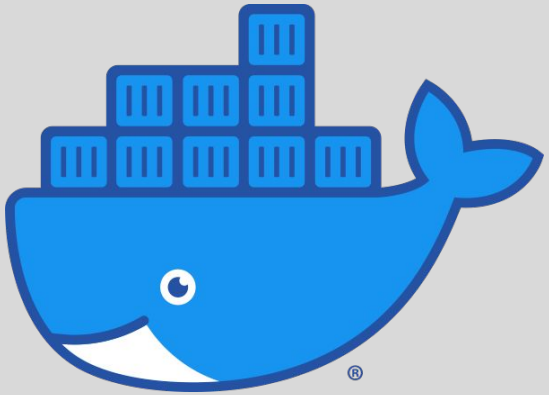
What is coming next?

- **Docker migration of everything** (Done for a part.)
- **4.2 migration**
- **Tons of new proxies and new cloud sites**
- **Opensourcing some of our home-made tools**





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- Any questions?
- Let’s talk about it.
- Or mail supervision@outscale.com