ZABBIX in the cloud

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

Zabbix-Summit 2019 – 11/12 october
The story begins for me in 3DS Outscale

2014 My job interview
• “What will you do during your first weeks?”

3DS Outscale
• Dassault Systèmes IaaS Cloud Provider
• Several datacenters around the world
• Tons of equipments, VMs, expert workers

My first weeks
• 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+
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...

- 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.
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 then created our first instance: “The Adm”

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

Connectivity to private subnets with production equipment and vms.
A few months later...

Zabbix-Proxy
Zabbix – Cloud server platform.
Remember the small architecture? Here is what it looks like now!
Add 2 hundred proxies

Collecting data everywhere

Sending them to the Zabbix-Server

(Poor config syncer !)
Tips for better performance

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

Specific to Zabbix
- Active items
- Proxies – Active too –
- Internal process monitoring
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 at the same time.
Twin monitoring platforms

US Zabbix Server
- Server
- Databases + LB
- Frontends + LB
- Grafana + LB
- Jenkins + LB
- Asterisk
- Smashing
- Custom dashboards in NodeJS, PHP...

Jenkins jobs
- 2x days Config sync + Dashboards

FR Zabbix Server
- Server
- Databases + LB
- Frontends + LB
- Grafana + LB
- Jenkins + LB
- Asterisk
- Smashing
- Custom dashboards in NodeJS, PHP...
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

<table>
<thead>
<tr>
<th>Availability</th>
<th>Max processed values /s</th>
<th>Items</th>
<th>Proxies deployed</th>
<th>AVG processed values</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>250 000 during a burst.</td>
<td>1 300 000 active</td>
<td>160+</td>
<td>10000</td>
</tr>
<tr>
<td>AVG Bandwith on server</td>
<td>Max tested processed alerts</td>
<td>Amount of TV using Grafana dashboards</td>
<td>Charge on the server</td>
<td>DB size</td>
</tr>
<tr>
<td>35 mbps</td>
<td>Up to 30k</td>
<td>200+</td>
<td>Around 5%</td>
<td>1500 GB</td>
</tr>
</tbody>
</table>
And about the old Zabbix Platforms?

- Audited
- Extracted the templates and items
- Abandoned
- Deleted
Daily mission: Monitoring the monitoring platforms.
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
• Any questions?
• Let’s talk about it.
• Or mail supervision@outscale.com