



VERY TECH TRIP TALK

Powered by  OVHcloud

Migration to the cloud, imminent departure!
Myths and beliefs. ☁️

Talk overview

ARE YOU
READY?! TO
TAKE THE BIG
STEP.. TO JUMP
INTO THE
UNKNOWN... AND
MIGRATE TO THE
CLOUD?

- Advantages & Disadvantages
- Myths & Beliefs
- Pitfalls & Trade-offs
- Experience feedbacks

**All while remaining cloud-agnostic
(= Not or little OVHcloud)**



What is a Cloud ?

What is the Cloud ?

The cloud refers to a network of remote servers that are accessed via the internet and used to store, manage, and process data, rather than a local server or a personal computer. Cloud computing allows users to access technology resources, such as software, storage, and processing power, on-demand and over the internet. This allows for greater flexibility, scalability, and cost-efficiency for both individuals and organizations. There are several types of cloud services, including public clouds, private clouds, and hybrid clouds, each with their own set of advantages and disadvantages.



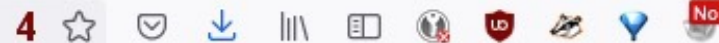
To summarize a ☁ :

DC + Network + Storage + Backup + Virtualization + OS + DB/App + Security + IAM + Logs

Peak ?

We're still busy preparing your account, please try again in a few minutes.

https://chat.openai.com/auth/login



ChatGPT is at capacity right now

Get notified when we're back

Write a radio ad about the status of ChatGPT.

[Narrator]

Welcome to ChatGPT, where AI technology meets conversation.

[OpenAI engineer 1]

We're excited to introduce you to our new chatbot model, designed to interact in a conversational way.

[OpenAI engineer 2]

But as we launch ChatGPT, we want to let you know that we're currently experiencing high traffic on our website.



Business model change

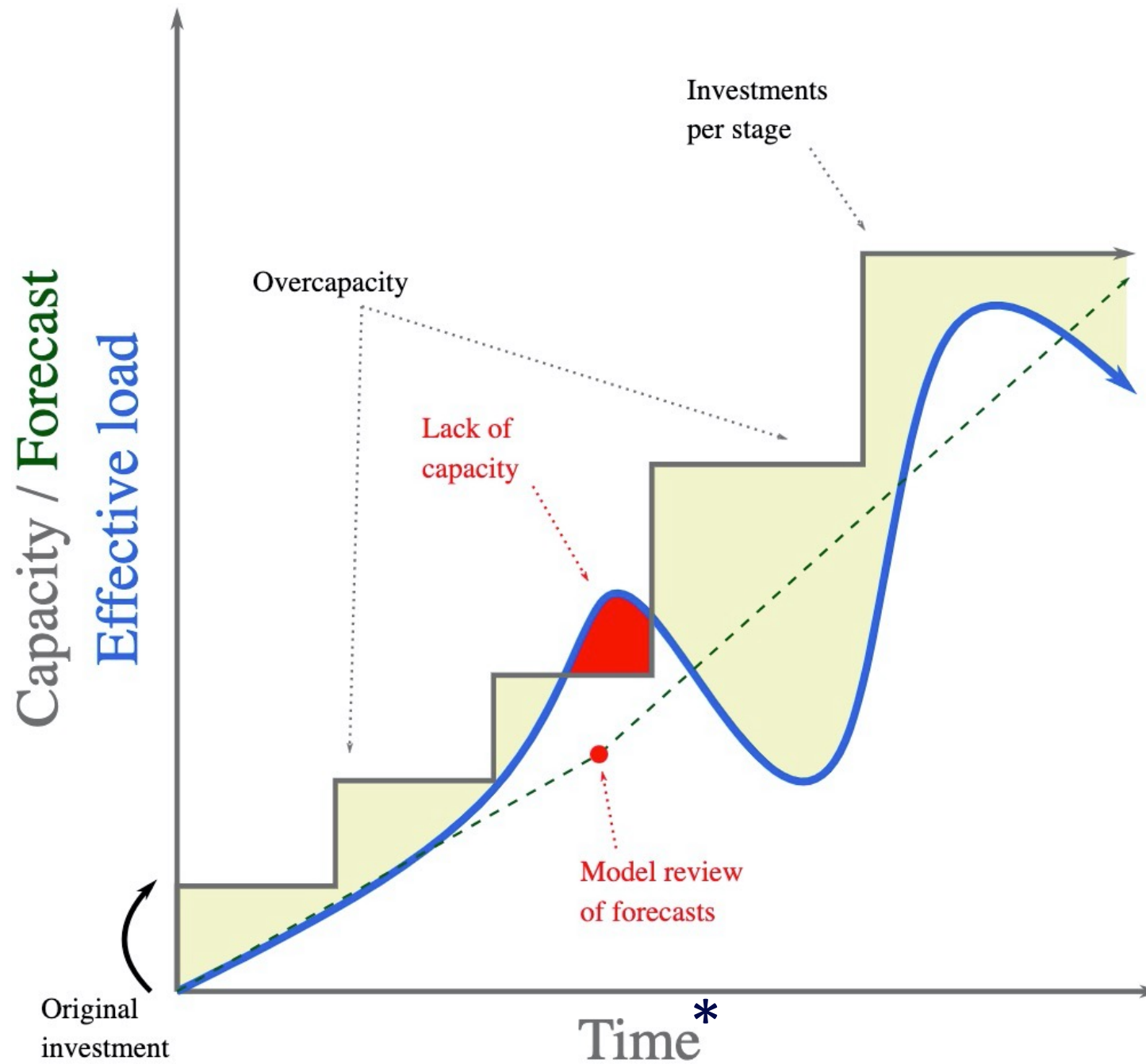
The Old way

- Mutualize servers and resources
- Sharding* clients by servers
- UPfront cost and delivery time

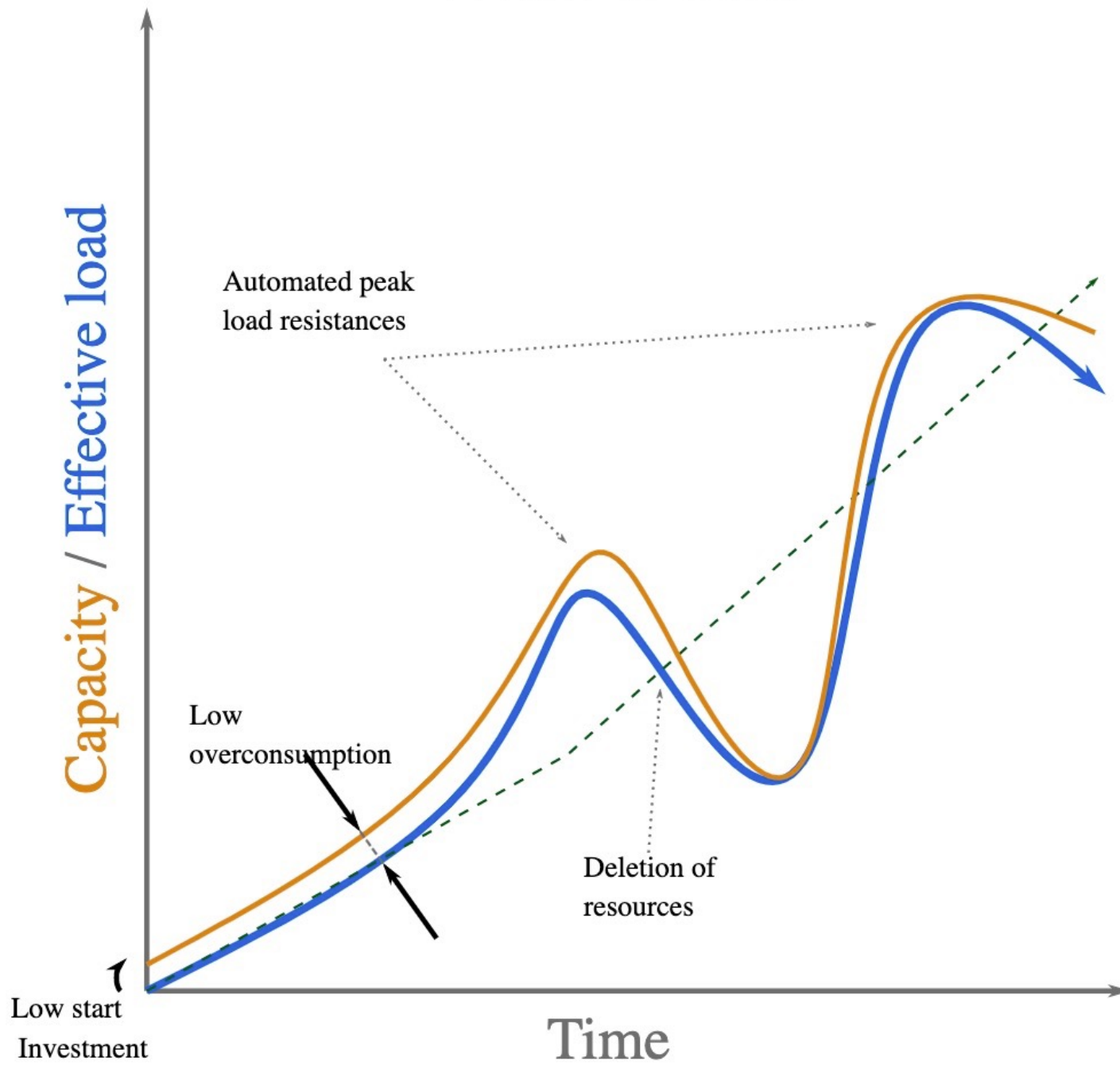
The effective way

- Scale by client and independently
- No initial investment
- Scale for events such as "Blackfriday"
- Scale temporarily for upgrade

Without cloud



With cloud



Cloud for the accountant

Investissement (CAPEX)

- Asset immobilization, server amortization plan over x years
- Funding plan for purchasing equipment call for bids
- Delays on deliveries ~6 months delay
- Replacement of old equipment inventory, relocation to datacenter

Service, Exploitation (OPEX)

- Pay as you go
- No initial investment
- Included technical support
- Pre installed service
- Resource can be added / remove on the fly
- Easy expansion to other region

On Premise / Cloud investment

	Internal IT	Managed Services	The cloud
Capital Investment	40000	0	0
Setup Costs	10000	5000	1000
Monthly Services	0	4000	2400
Monthly Labor	3200	0	1000
Cost over Three Years	149000	129000	106000
Saving gained	0	13%	29%

5 Years
+ Logs
+ Networks
+ ...












+ Logs
+ Networks
+ ...

Estimated cost of infrastructure for two application servers, two databases servers and a loadbalancer, across internal, managed services and cloud deployment models.

Source O'reilly Media Georges Reese



On Premise / Cloud time engineering time Spend

	On Premise	Cloud
Hardware / OS setup		
Application Deployment		
Application Setup		
Hardware Maintenance		-
Software update		
Training		

Prepare a cloud migration

Migration is a management issue before being technical.

- Do it for good reason and explain the purpose to the impacted teams.
- Clearly define the "scope"
- Setup Leadership and policies to guide the migration and changes within teams
- Motivate towards migration, certain positions are impacted
- Create center of excellence to communicate and assist with migration
- Do not underestimate the training time.
- Migration is time consuming



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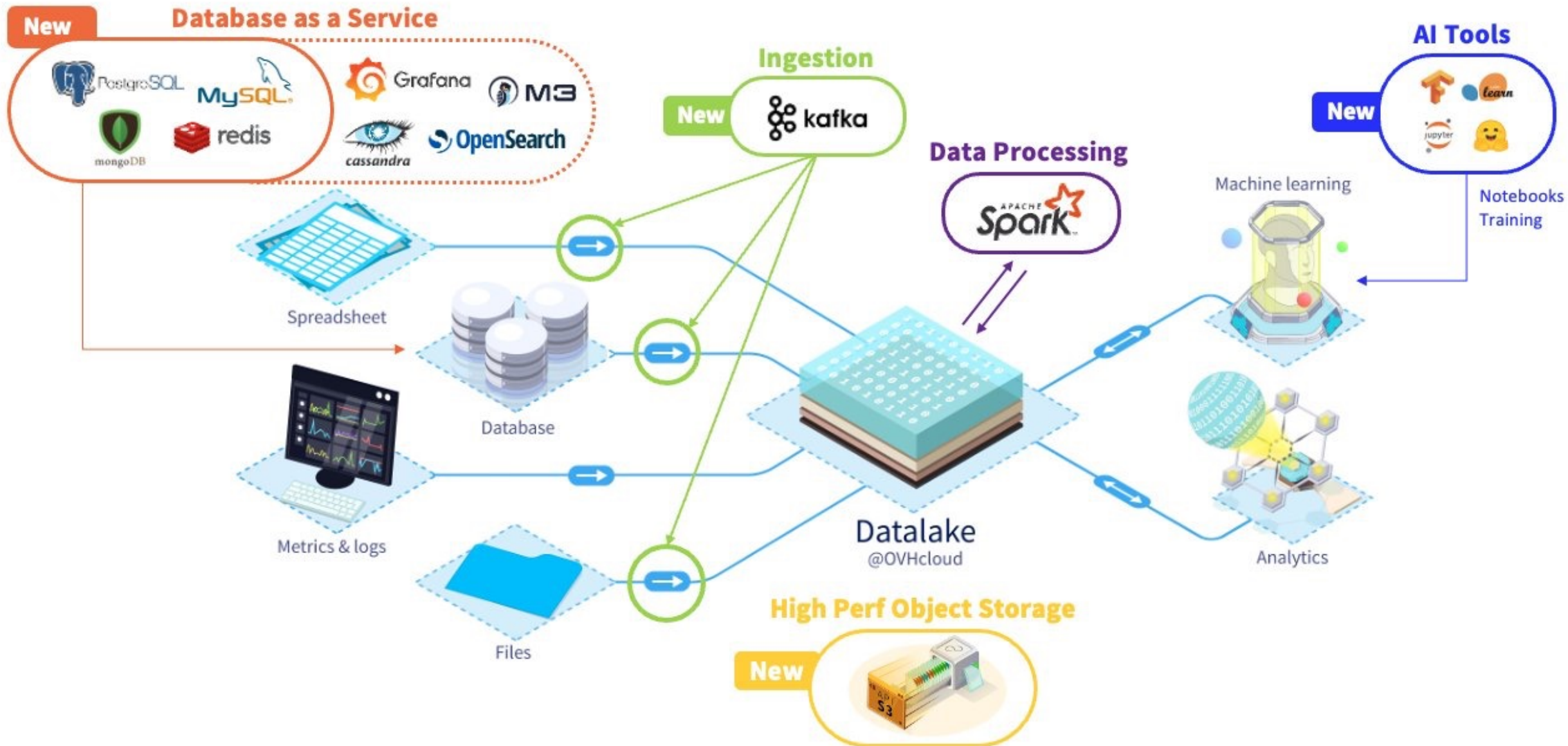


David Aparicio
DataOps @ OVHcloud



GIS-DATA

Datalake



Use case: Datalake migration

Starting points:

- Old infra architecture
 - 200n, 10k CPU, 85TB RAM, 13 PB
- Nightly build (C&B)
- RUN team not operating the DC
 - 2-5 disks to change/week
- Very slow to have a new machine bare-metal (6-18 months)
 - N tickets, M steps, X teams
- PCI-DSS* environment

End points:

- Cloud VMs, deployed by CI/CD (Terraform + Puppet or Ansible)
- VMs dedicated to the datalake
- CMDB* documented
- Automatic observability
- Chaos Monkey enabler
- Can deploy a new tenant

What slowed down the migration ?

- New cloud, new notions/vocabulary
- SOC questions
- Specific infra, not available yet (artifactory, docker registry...)
- Custom Terraform (wrapper)
 - Working on every cloud provider
 - Same naming
 - XL => C5a.4xlarge
= F16s v2 = c2-standard-16
- Full stack deployed
 - Consul (KV, DNS)
 - Puppet Master
 - LDAP
 - Grafana
 - Prometheus
 - Splunk

What slowed down the migration ? Cont.

- Custom Terraform (wrapper)
 - Deploy and operate anywhere anything
 - New version every sprint (monthly)
 - Max 3 versions supported
 - No LTS
- Fast and furious
 - Consul -> ETCD
 - Puppet Master -> Puppet agent -> Ansible
 - Missing Team Sync using this tool in PROD
- Top-down decision (cloud + provider)

What moved the migration forward ?

In the company:

- Coffee machine
- Transversal monthly discussions
- Conference technical talks
- Custom Terraform doc
- Crisis in the DC evolution

In the cloud:

- Tutorials
- Documentation
- Support

Flexible



Sandro @Kharec · 19h

Monter une instance rapidement pour réparer un truc dans une autre en montant le volume dessus puis en chrootant à 18h30 pour dépanner un collègue aux US, c'est la vie que j'ai décidé de mener.



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<https://twitter.com/Kharec/status/1615403598023888899>



Pierre-Yves Verdon
SRE @ OVHcloud



Use case: Migration of web services : management of physical and online store.

Starting points:

- Aging infra architecture
- Very manual deployment of servers and applications
- Some parts of the code are not maintained
- A lot of code in SQL
- Kubernetes by Rancher
- Strong infra / dev separation

End points:

- Cloud VMs, deployed by CI/CD (Terraform + Ansible)
- Deployment/Build of code by CI/CD
- Managed Kubernetes
- VMs dedicated to databases
- Haproxy LB + Modsecurity

What slowed down the migration ?

- Lack of training for the Infra team and human investment
- Direction towards the cloud not shared by some people
- Not mastered code with technical debts
- OS version change
- Impact of the "RUN" on the infra team
- Impact of the "RUN" on the dev team

What moved the migration forward ?

In the company:

- Managers involved in the migration.
- New developers with cloud experience
- Prioritization of goals by teams

In the cloud:

- Cloud technical support
- Terraform providers
- Pluralsight training
- Cloud services
- Cloud credits for the pre-production environment.

Lesson learned InfraCost

- Manage cloud cost by environment from the beginning
- Define a monthly / yearly budget
- Spend wisely your "free budget"
- Track the licenses, services, and VMs cost
- Do not oversize servers in advance, they are resizable "at will"
- Do a monthly or quarterly cost review and takes improvement action

LET'S REVIEW
WHAT WE HAVE
SAID !

Synthesis time



Key Takeaways

- Automate (IaC), unified terminology
- Choose wisely between services and self managed
- Encourage Leader and Teams for migration
- Migration is time consuming vs RUN.
- Define Cost limits (hidden costs)
- Embrace the Cloud flexibility



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