



LA POSTE 2020
CONQUÉRIR
L'AVENIR

OCP Standards In the cloud
Strategy of La Poste / IT
department Services-Mail-
Parcels

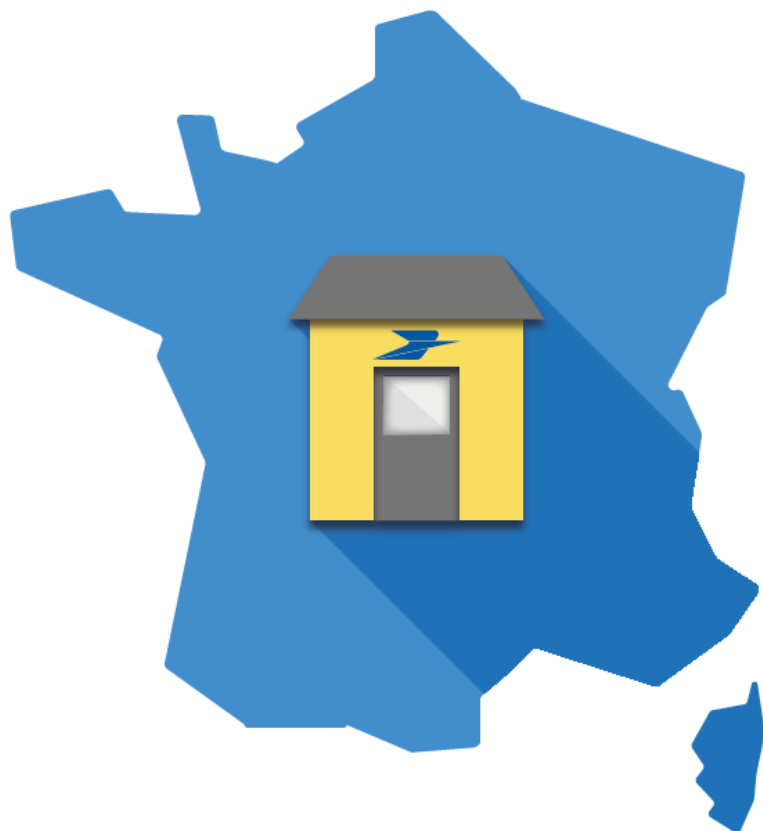
May 2018



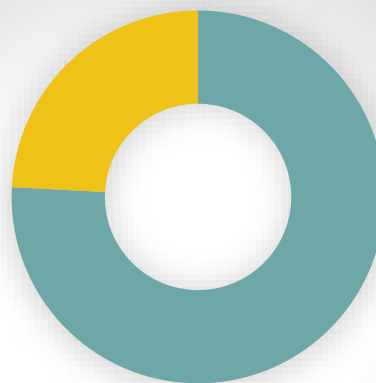
LE GROUPE LA POSTE



A group that counts : a major group in the French economy



€ 24,1 bn*
in revenue



of which

75.6%
from France

250,000
employees around the world

17,000
retail outlets

44
countries

5
continents

* 2017 figures



A group that counts : a major group in the French economy

4 PUBLIC SERVICE MISSIONS

- provide home mail delivery six days a week
To all people in France
- Provide access to banking services for all through
“La Banque Postale”
- Contribute to regional planning through the
presence of postal services
- Transport and deliver newspapers and
magazines



3 NEW PUBLIC INTEREST ACTIVITIES

- Be a major player in the energy transition
- Help modernise public action
- Offer trusted third party digital solutions



A RESPONSIBLE GROUP

100%

Of the mail and parcel
services are carbon neutral

100%

Of electricity used
is sourced from renewable
energy sources

100%

Of employees attend
a training course every
two years



A group organization in five business units

SERVICES-COURRIER-COLIS
(Services-Mail-Parcels)

GÉOPOST
(International express
delivery)

LE RESEAU
(Post Offices)

LA BANQUE POSTALE
(Banking activities)

NUMERIQUE
(Digital services)

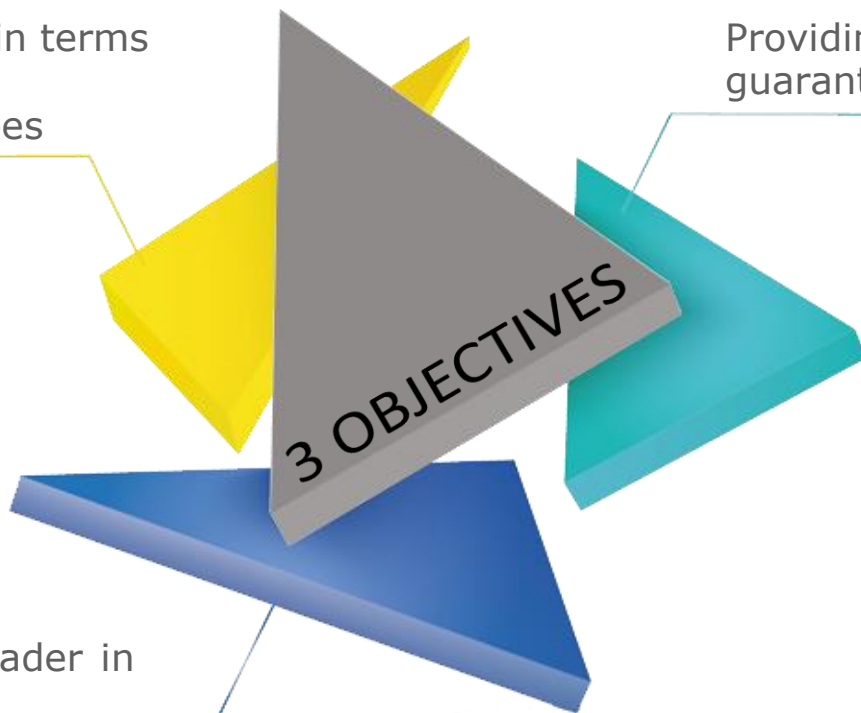




"La Poste 2020 : conquering the future" strategic plan.

To become a reference in terms
of innovation for both
customers and employees

Providing a digital trust
guarantee



Being the European leader in
local services

"In 2020, you will not recognise La Poste, but you will recognise its values"

Philippe Wahl Chairman and Chief Executive Officer
of Le Groupe La Poste

A conceptual image showing a goldfish jumping from a small glass bowl into a larger body of water. The background features a bright sun on the left, creating a warm orange glow, and a dark, silhouetted shoreline on the right. The text is overlaid on the lower part of the image.

SERVICES-MAIL-PARCELS

To a world of services



To a world of services

3 objectives :



To be a reference partner of the
e-commerce



To be a major player in **urban
logistics**



To be an actor for the
development of **local and in-
home new services**

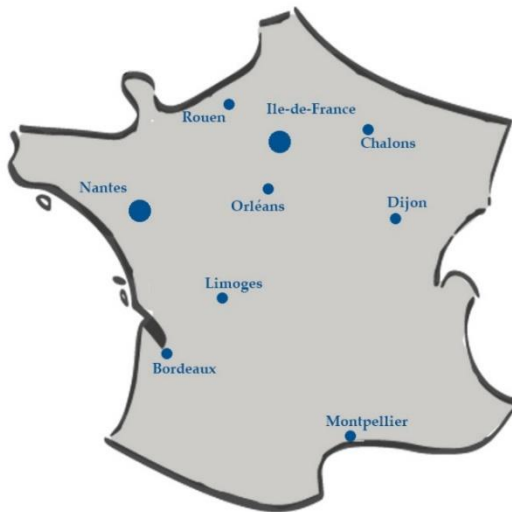


IT DEPARTMENT SERVICES-MAIL-PARCELS





A quick overview





Changing our Information System

Our Information System will have to ...

TOMORROW

Change from an industrial-oriented IS to an **IS of services**

Support and test **new business models** on shared value chains with partners

Drive the **profitability** of offers in "real time"

Integrate with **transversal IS models** from Group La Poste, holding and subsidiaries

Take into consideration all **customer requests**

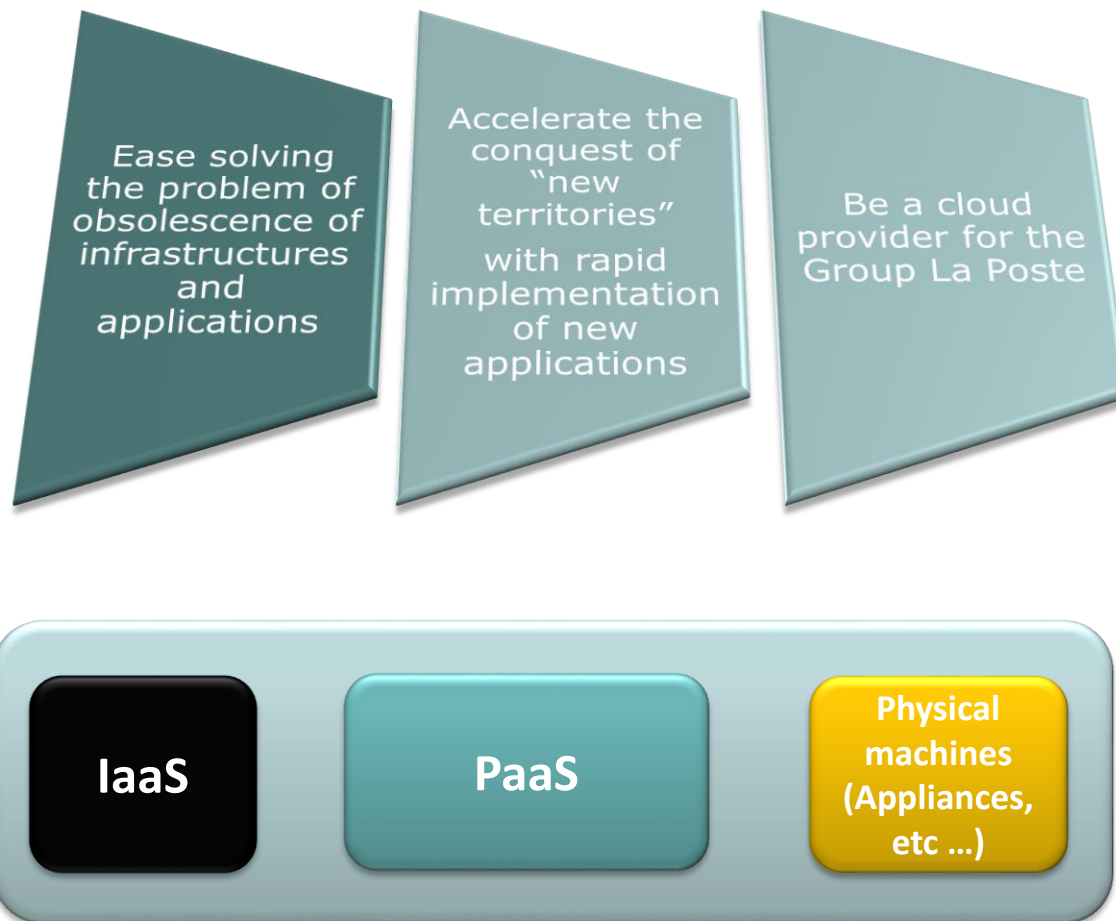




CLOUD SERVICE AT IT DEPARTMENT SERVICE-MAIL-PARCELS



Cloud strategy





PaaS at the IT Department Services-Mail-Parcels

Working on IaaS
(Automated VMs deployment factory)

July 2015

October 2015

Building our
PaaS solution

January 2016

Working on a PaaS based on the IaaS

- OpenShift 3.0,
- Build a test platform
- New exploitation toolkit : ELK, Centreon,

A new organization : pizza team

- Use of the « agile » method with the help of RedHat Experts (organization and knowledge transfer),
- Iterative method : 2 weeks per iteration.
- Contributors both Dev and Ops.

Results

- Customer opening :
 - PaaS for Test purpose December 2015
 - PaaS for Build purpose January 2016
 - PaaS for Run purpose May 2016
- Service offered : out of the box services / no customisation / use of solution & Editor standards.



2016 : A new dynamic for the project

IT Department : « ITaaS task force »

To integrate new technologies in our existing portfolio.

May 2016 : new goals for the project

“ITaaS Task Force” : A stand-alone, multi-site and multi-skills team, with DEV and OPS structure, implementing Agile methodology.



- Help legacy projects to re-platform their apps (LAMP, Java), in order to manage obsolescence, and continue to operate these apps.
- Help new strategic / business application, in a dev-ops model.
- Maintain ITaaS offers up to date, and add new services and fonctionnalités.





CI CD Platform

Continuous Integration Platform



GitLab



Jenkins



sonarqube



CHECKMARX



OCP BUILD



php



IaaS



OCP RUN



php

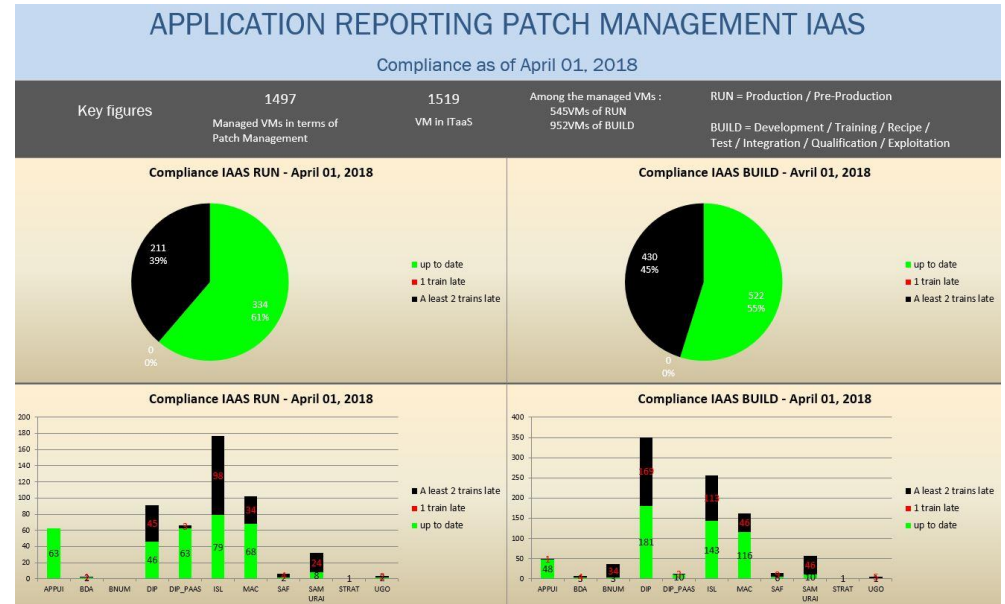
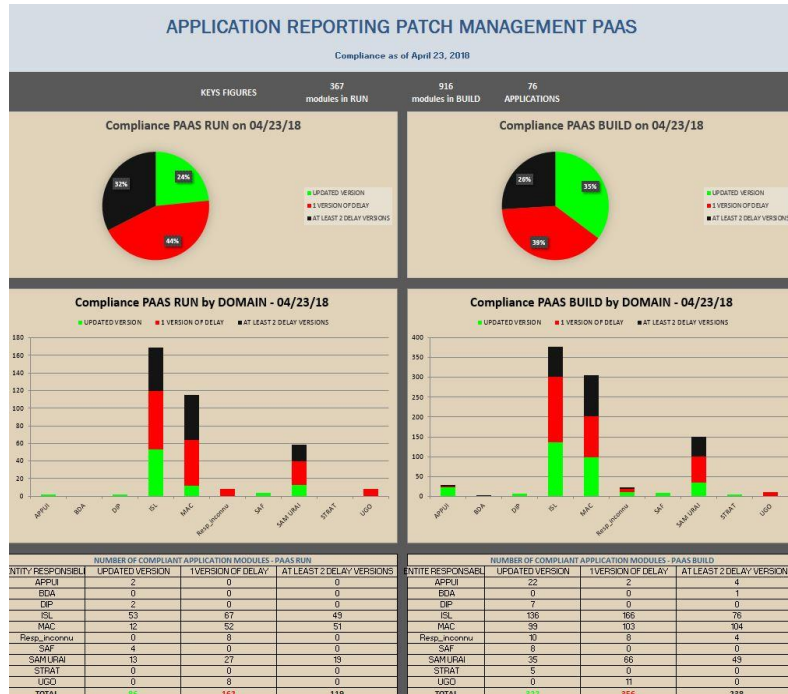


Log management stack

Log management stack



Security compliance reporting



2 types of reports based on the same model:

- For the PaaS, developed scripts use the OC Client to collect information about applications images versions deployed and shows the level of compliance with the latest available versions.
- For the IaaS, extracts from tools like RedHat Satellite, Suse Manager, Landscape, WSUS, are correlated with Application inventory and compared to the latest available security patch maintenance train.



Metrics

The Graphite/Grafana suite is used :

- To historize the Openshift metrics and to collect other metrics provided by Infrastructure Services, Middlewares and Databases like Vmware, Java and Cassandra ...
- To produce dashboards to monitor and analyze the activity of our environments
- For the PaaS, we use the default Heapster for default OpenShift metrics and a standalone Heapster for sending metrics to Graphite. Diamond is used to collect system metrics (node CPU, Mem, disk ...) and send them to Graphite.

We have different visions of the consumption of our resources for OCP:

- By Applications
- By Node
- All nodes
- Top 5 or Top 10 of the biggest consumers

For IaaS, we have a monitoring of the consumption and we can draw a parallel between the resources provisioned and those actually consumed.

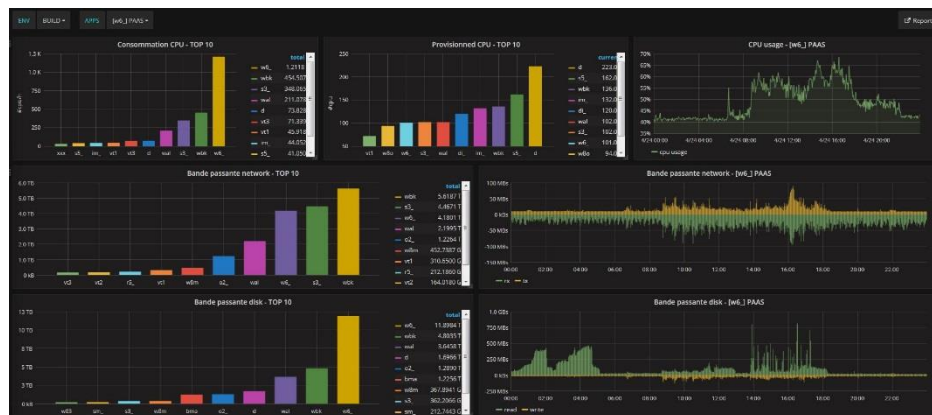


Metrics Dashbord (Infrastructure View)

OCP CLUSTER



VMWARE CLUSTER





Metrics Dashbord (Application View)



By application metrics

Top 5 applications





2017 PaaS Project Achievements

Since 2016 :

- Total of 22 applications moved from our legacy platform
- Total of 28 more new applications developed directly on the ITaaS platform

A still growing Cloud service offer :

- OCP (from 3.0, 3.1, 3.2, 3.3, 3.4, 3.5)
- News services : Varnish / Elastic Search / NodeJS / Cassandra...
- The availability of new tools for the projects : ELK / Grafana

More changes for the projects teams:

- With the use of mandatory automated tests, all Project teams can update more easily their product stacks to follow editors updates and their own life-cycle demands.
- We set up a dedicated organization to move all apps from the legacy platform to our cloud platform.
- Projects are increasingly self-reliant with the use of the cloud platform.

But also 2 new DataCenters to build :

- ITaaS for all
- New network infrastructure
- New pizza teams to synchronize





2018 : Adding 2 new DataCenters

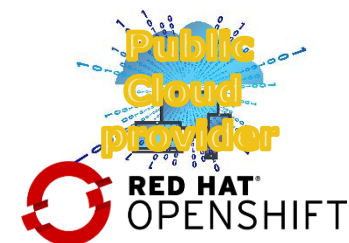
2 new Datacenters :

- Fully independant / Isolated Datacenters
- Low latency network
- CISCO ACI
- Using the same CI CD to deploy an application to multiple OpenShift Cluster distributed across 3 DC + 1 Public Cloud provider



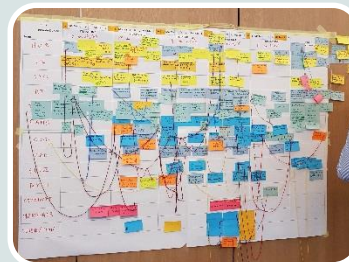


2018 : 2 new DataCenters





2018 : a SAFe Organization



With the use
of SAFe
framework

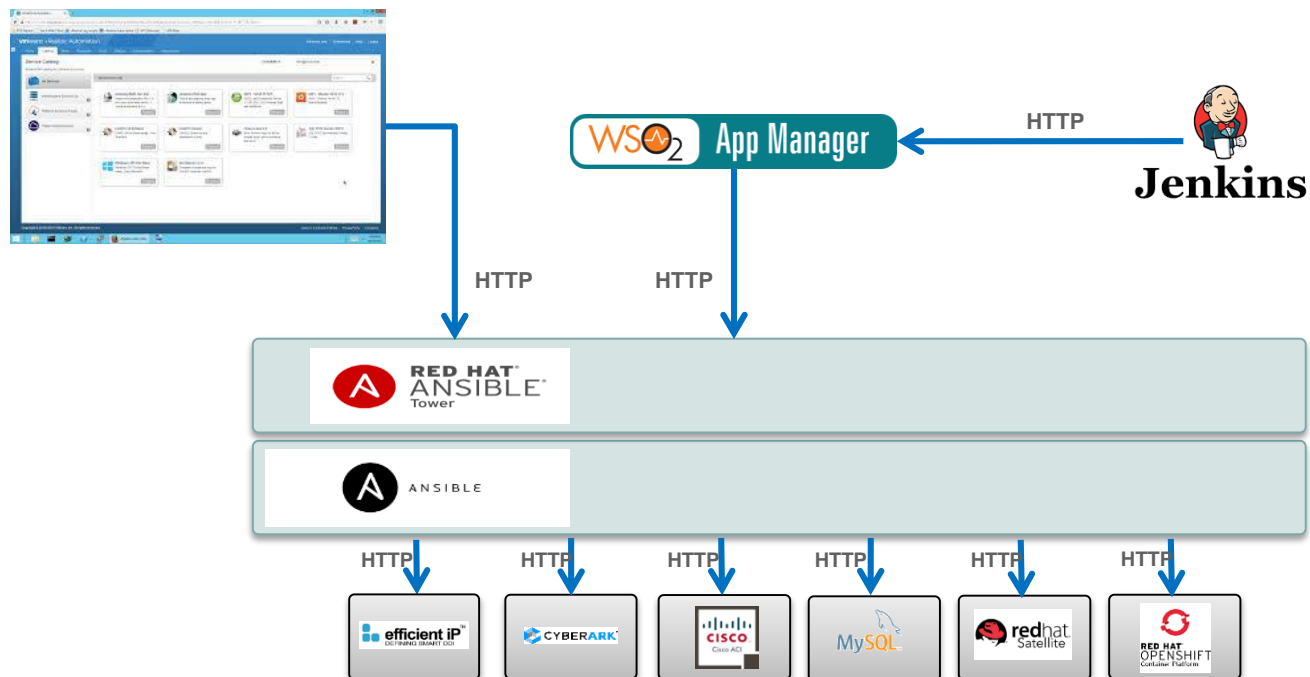
Synchronize
10 pizza
teams

Program
Increment
Planning

5 two-weeks
iterations

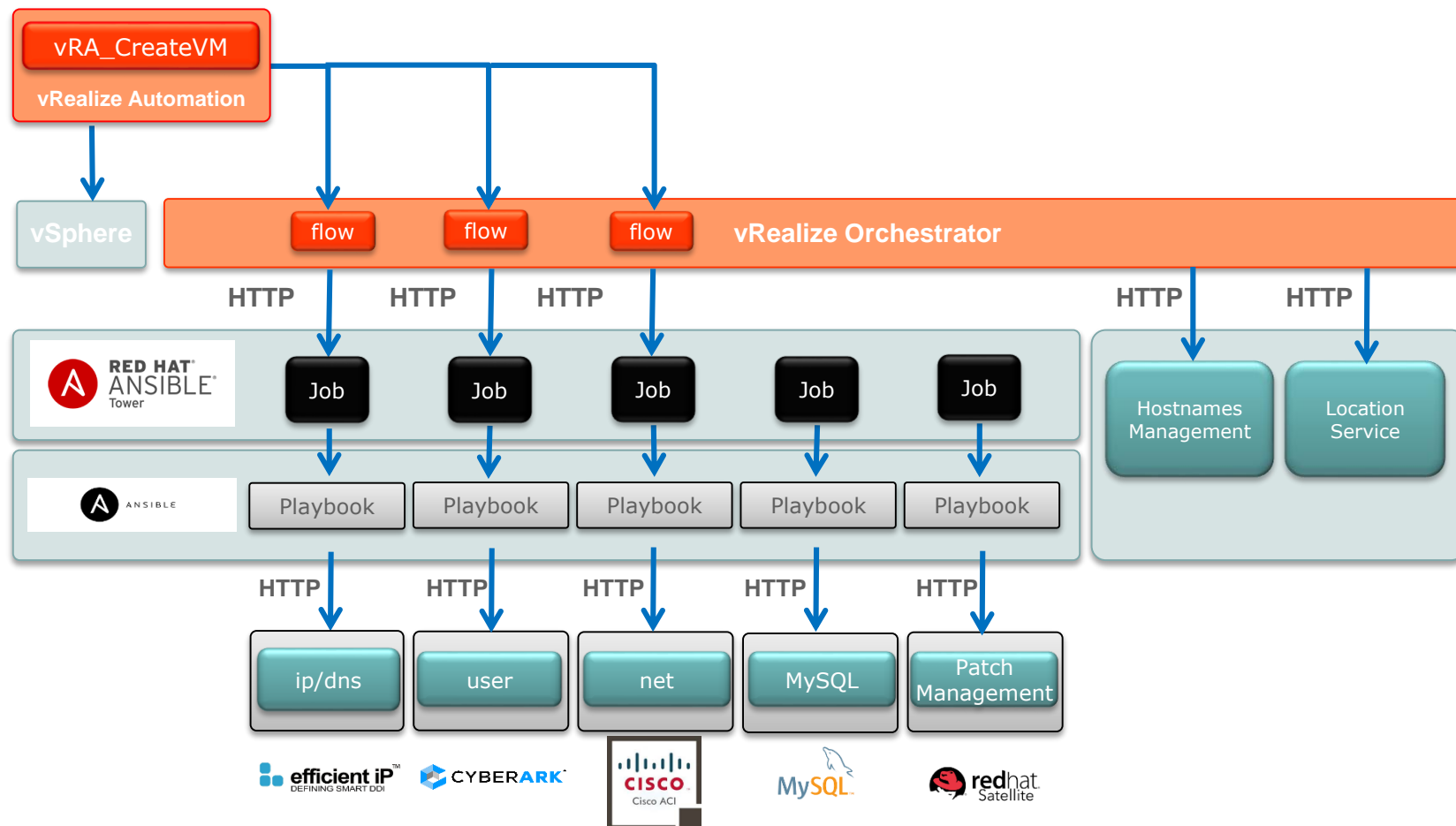


Infra as Code / Ansible Tower and Ansible to manage IaaS and PaaS services

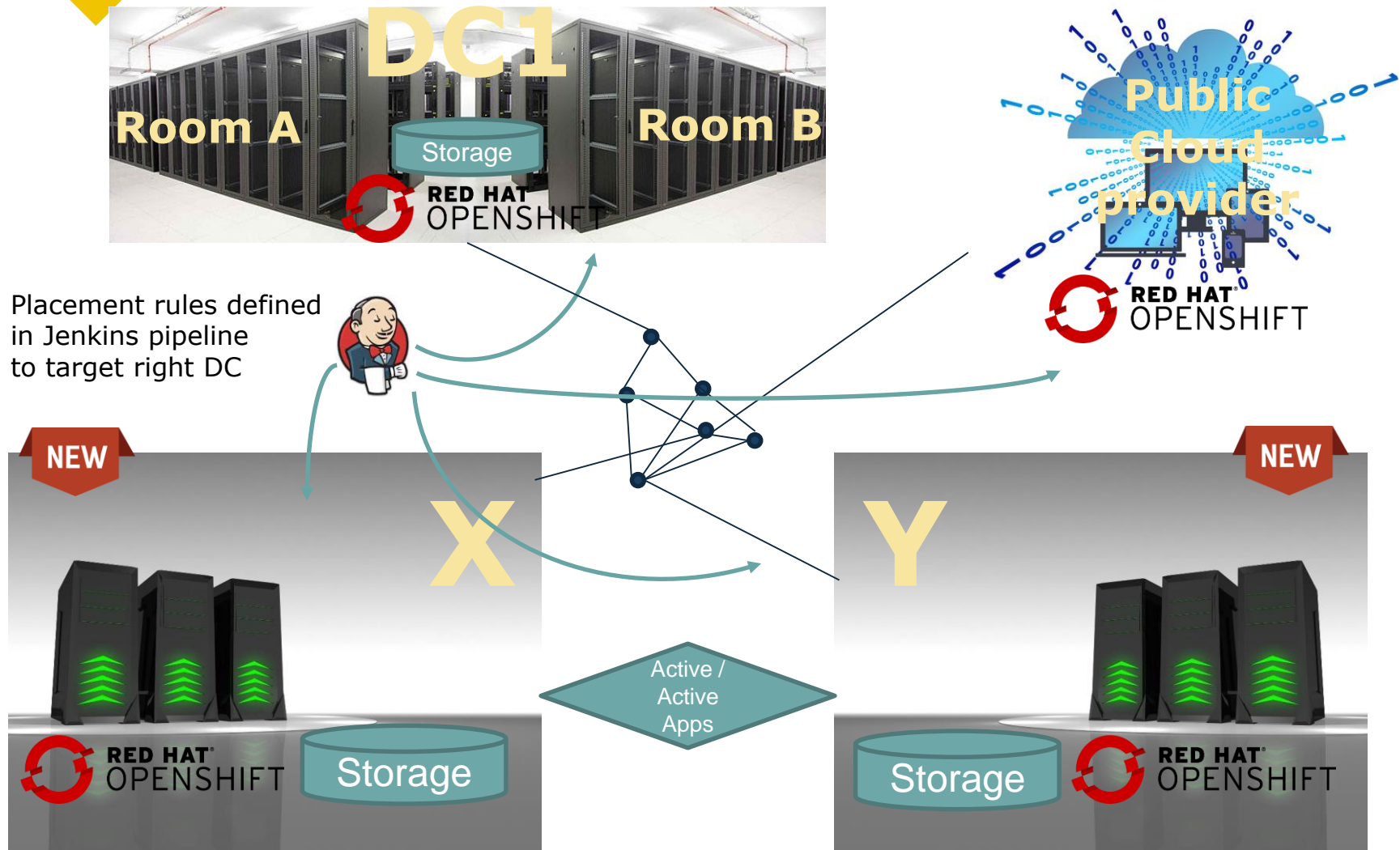




Infra as Code / Ansible Tower to deploy and configure IaaS



Principles of Application deployment





Active / Active Applications on 2 Datacenters

Few principles :

- Applications **are responsible** for cross-DC resilience
 - no Infrastructure service/SLA to provide cross-DC replication for example
 - When needed, applications can share Distributed cache using available services such as Redis, or DB replication for MySQL, PostgreSQL...
- The application is deployed on 2 datacenters with Jenkins, with affinity placement labels to target the right DC
- An Application will consume services on the same DC as much as possible, to avoid unnecessary cross-DC communications
- APIs are exposed through an API gateway located on each DC
- An External Load-Balancer (F5) balances traffic on both sites, using DC-affinity rules

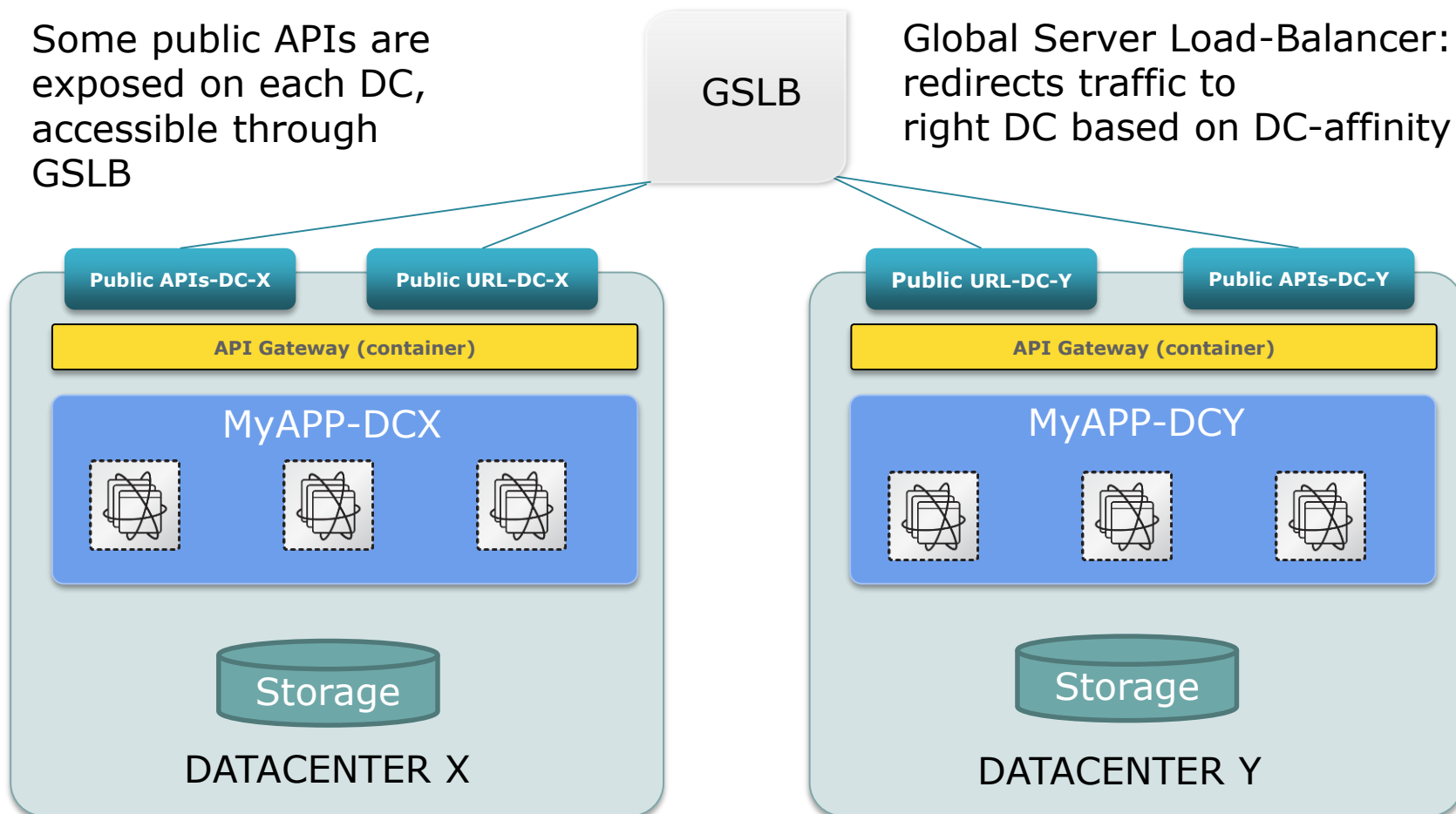


Active / Active Applications on 2 Datacenters

Some public APIs are exposed on each DC, accessible through GSLB

GSLB

Global Server Load-Balancer: redirects traffic to right DC based on DC-affinity rules





Dynamic Storage provisioning with dedicated GlusterFS on each DC



Gluster
(dedicated hosts)



Storage secured (replica 3) using
GlusterFS within the same DC

No replication



Gluster
(dedicated hosts)



Storage secured (replica 3) using
GlusterFS within the same DC



2018



Mid-2018, 63 Apps running on the ITaaS platform :

- 26 applications re-platformed from our legacy platform
- 37 new applications developed directly on the ITaaS platform

A still growing Cloud service offer :

- OCP (3.6, 3.7)
- News services : Varnish ...
- New tools : Ansible Tower, RedHat Satellite, Nexus
- Quotas and Limits sets for every projects according of the middleware they use (pods size S, M, L, XL) to protect our OCP clusters ressources.

More changes for the projects teams:

- With the use of automated tests and containers, all Project teams can update their product stacks to follow editors updates and their own life-cycle demands.
- For example it take a few hours to update 10 applications that were using Drupal after a critical security advice.



Collaboration with RedHat



Services :

- Mixed team at the beginning of the project : incl. RedHat experts, architects to setup the platform.
- RedHat experts (4 days / month)
- Architecture guidance
- Training
- Pre-sales

TAM :

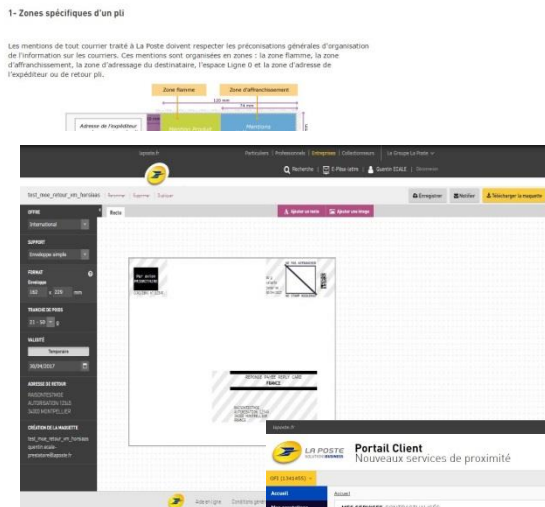
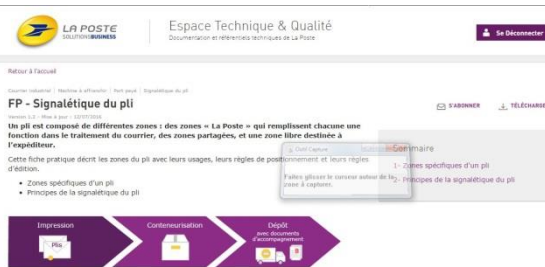
- Knows perfectly our environments and configuration,
- Helps communicate with the support team
- Dedicated chat group

- Common workshops with the extended RedHat account team.



Lessons learned

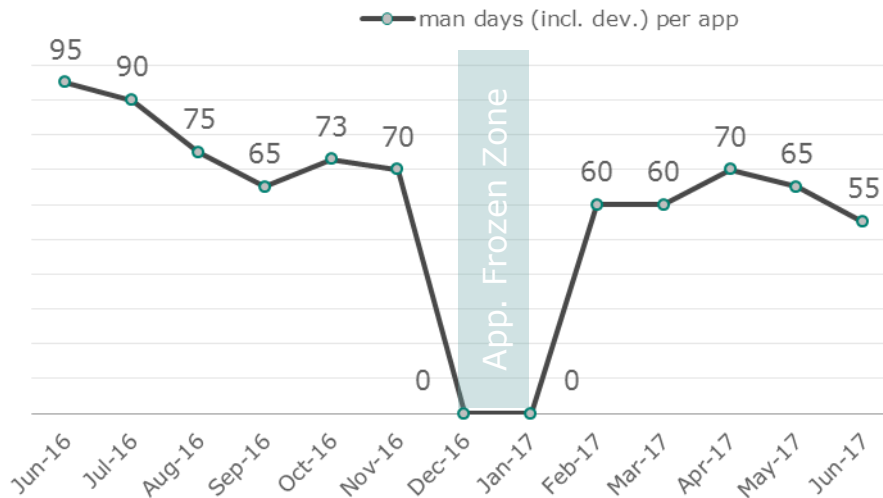
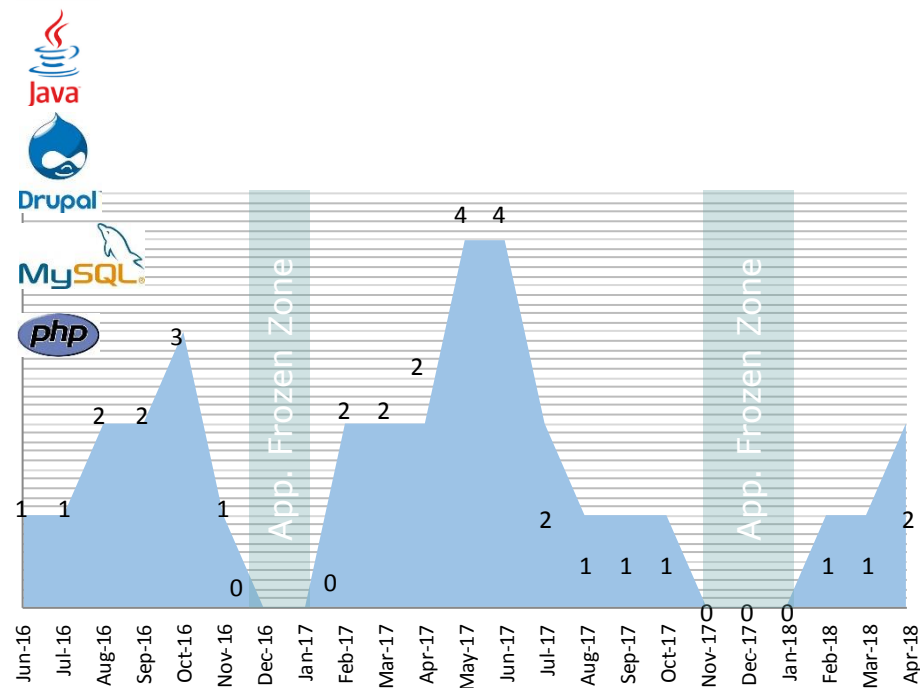
- Installing an OCP platform is a technical project, without any difficulty for experts or architects, but it needs a good planning in advance.
- Communication is the key to lead change into people's mind, and transform an organization.
- Too complicated to change a large number of people working at the same time while doing any other activity.
- Customers (project teams) have great expectations from the Cloud !





Lessons learned

Based on the lessons learned we increased our re-platforming efficiency :



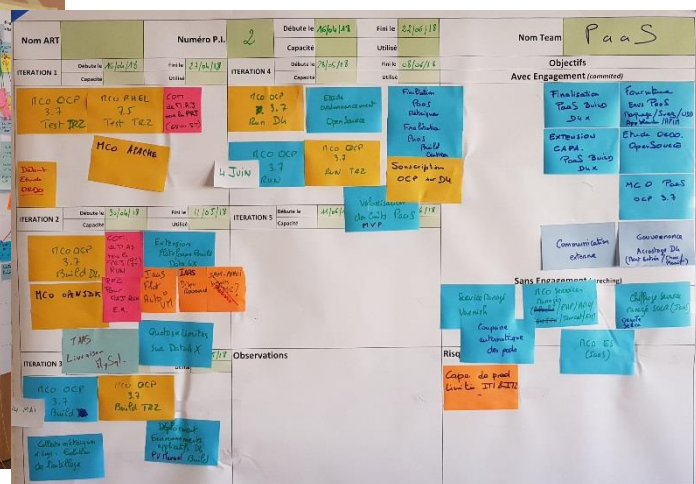
An average of 2 Apps re-platformed / month.

40% decrease of the necessary effort for re-platforming an application.



Lessons learned

You can build a new Datacenter with agile methods but it needs a lot of synchronization between teams (SAFe®)





Thank you

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