DevOps Ignition to reach Galaxy continuous integration

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DevOps ignition ...

DevOps

Galaxy

\+

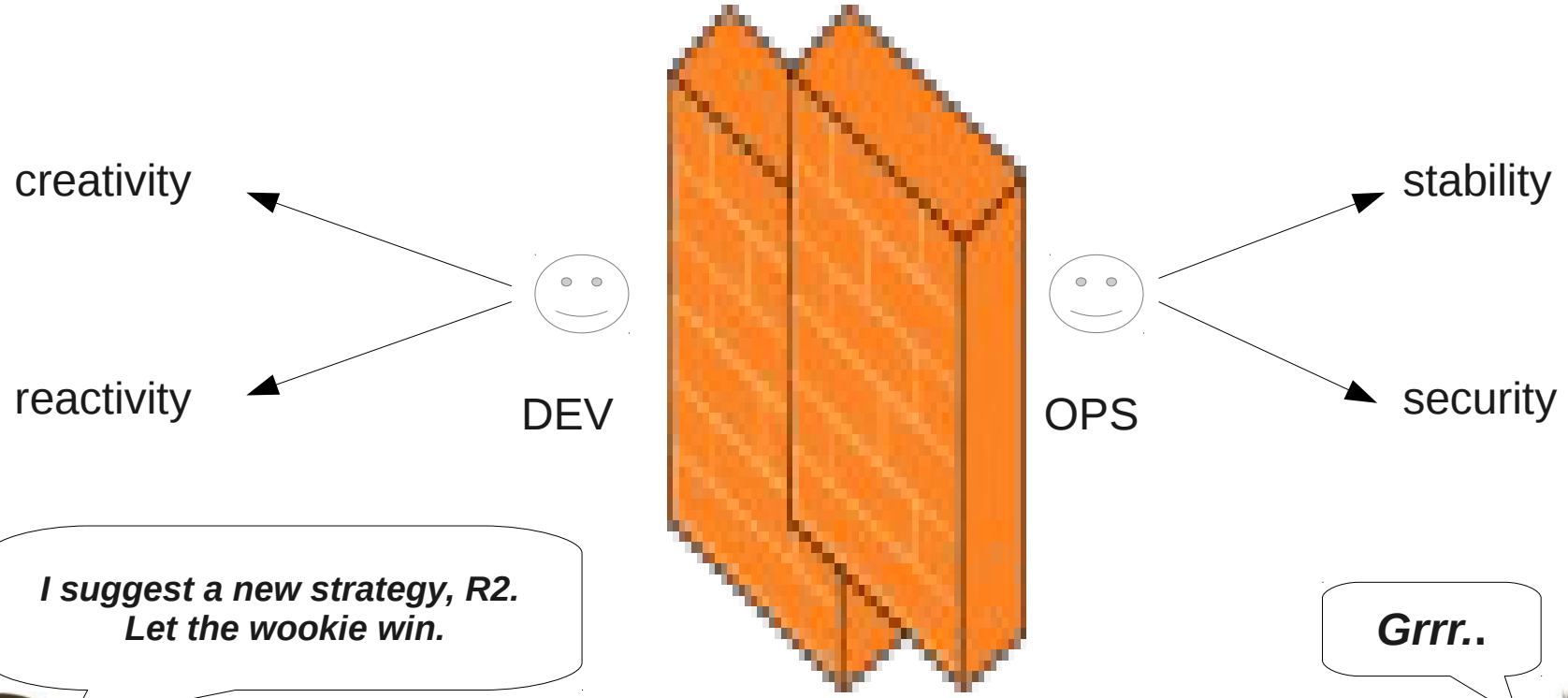
URGI

DevOps

- Dev Ops in 2 sentences :
  - « The DevOps is a software development mouvement that stresses a close relationship between software developers and netsys admins. »
  - « The goal is to enhance and speed up the cycle of software production from the creation to the delivery to final users, with a special focus on quick resolution of users issues. »

DevOps

- Usually a **wall** between dev teams and operational (netsys) teams



=> how to break the wall ?

3 hammers to break the wall

- **Collaboration** :
  - A collaborative approach : work together, talk together
- **Infrastructure as a code :**
  - You manage your infrastructure as you manage a piece of code
  - Ex : creating a new image via a script/api execution
- **Continuous delivery**
  - « *Continuous Delivery is a software development discipline where you build software in such a way that the software can be released to production at any time.* » Martin Fowler.

The mission ...

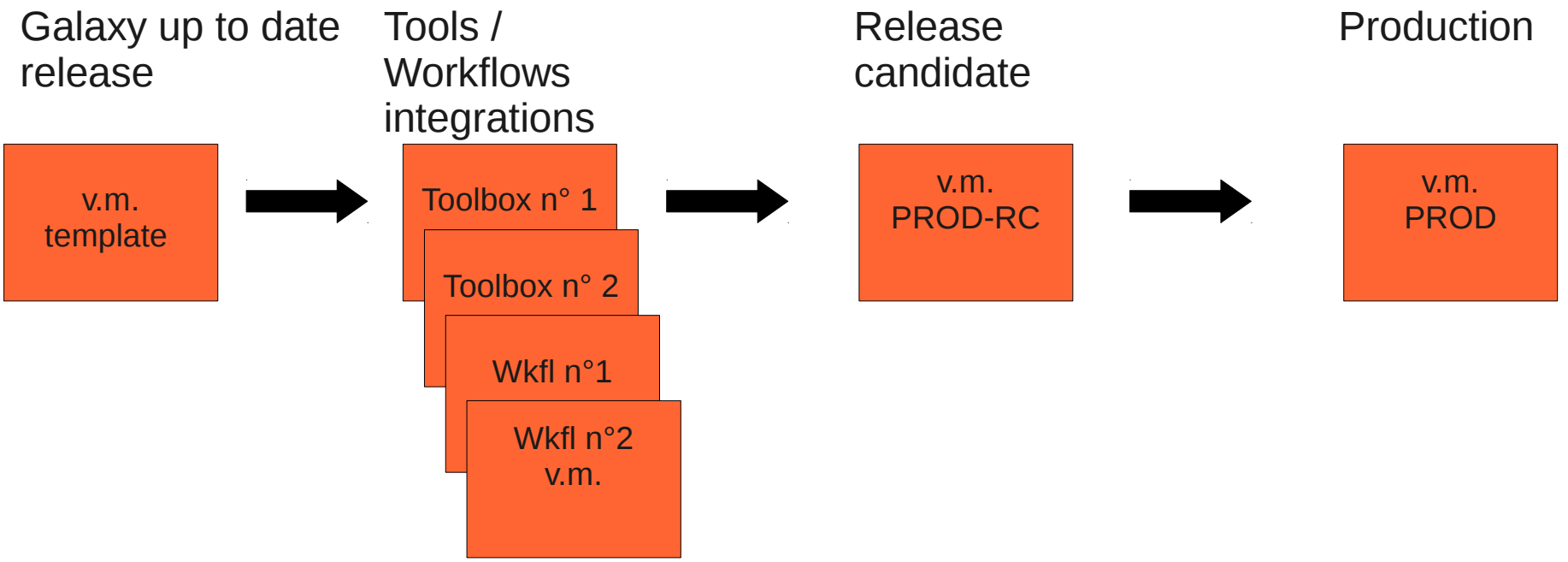
- Objective : put quickly new releases in production
  - Tools, workflows
  - New Galaxy releases
- The problem :
  - Big differences between dev env and prod env
  - Galaxy instance difficult to update
  - Only netsys admin team can put in production

Design a dev workflow

- Virtualization tech are avalaible

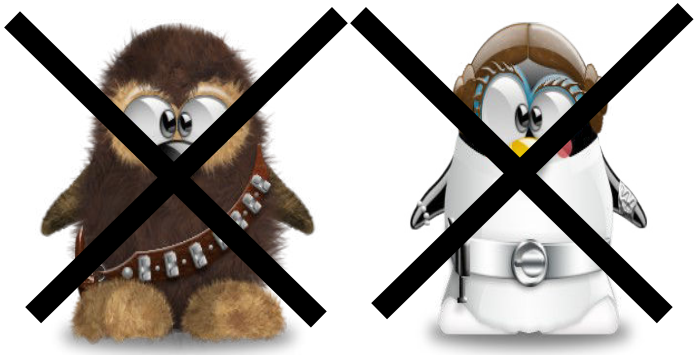
PROXMOX KVM

- A model for dev workflow :



Fix the problems

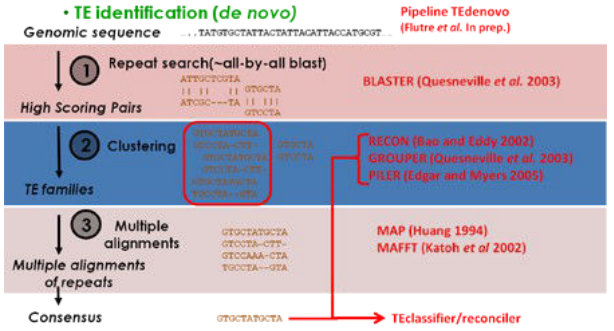
- Differences dev/prod:
  - Dev image becomes production image
- Update problem:
  - A template with a fresh version of Galaxy
- Only netsys admin ...:
  - Ask the developers to “execute” the workflow !

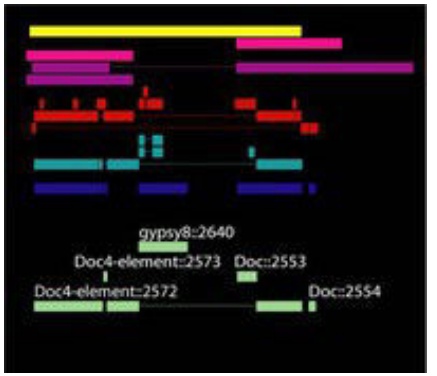


Existing resources : the crew

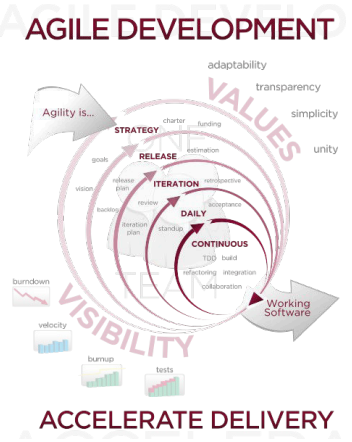
Software developers team:

(i) working on TEs and mobile elements detection + workflows NGS





(ii) and organize itself according Agile :



for project managment

for code production

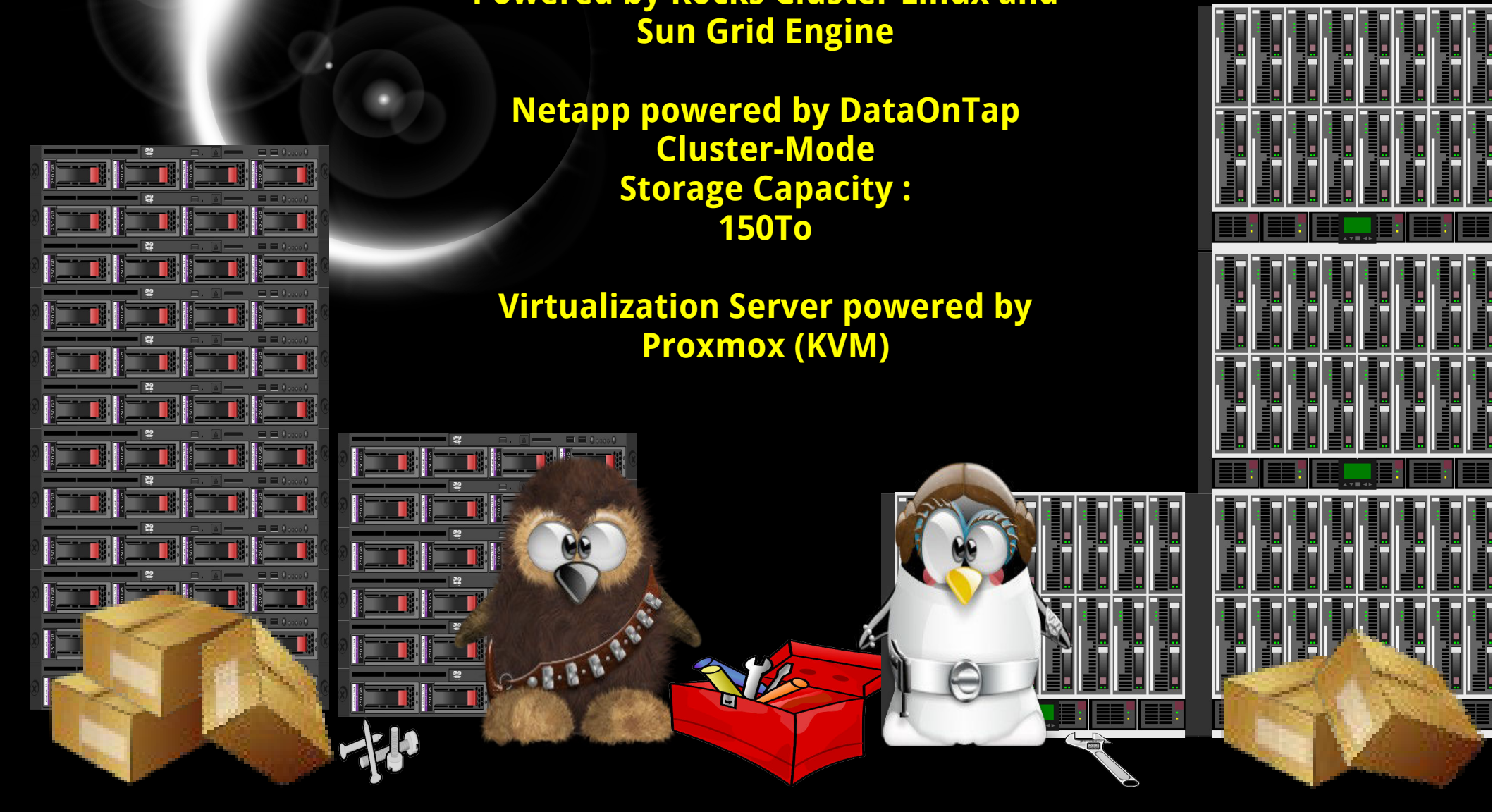
Exisiting resources:the ship

« You've never heard of the Millennium Falcon? … It's the ship that made the Kessel run in less than 12 parsecs » H.S.

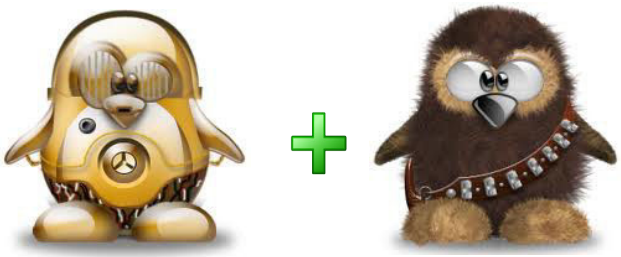
HPC Cluster :
Nodes: 78 Cores : 888
Powered by Rocks Cluster Linux and Sun Grid Engine

Netapp powered by DataOnTap Cluster-Mode
Storage Capacity :
150To

Virtualization Server powered by Proxmox (KVM)

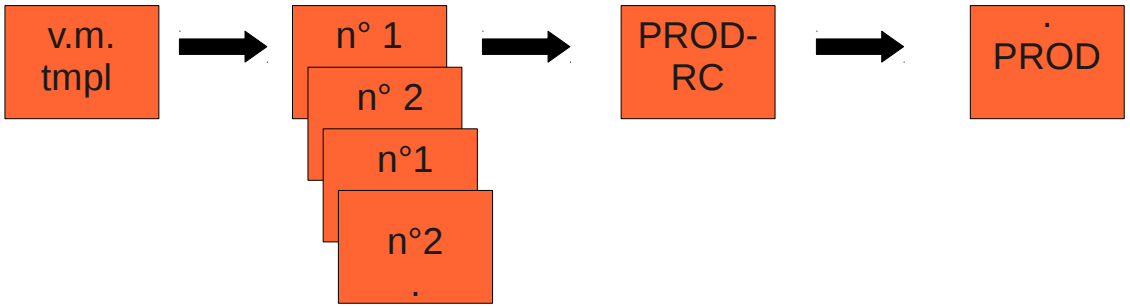


Mission stages

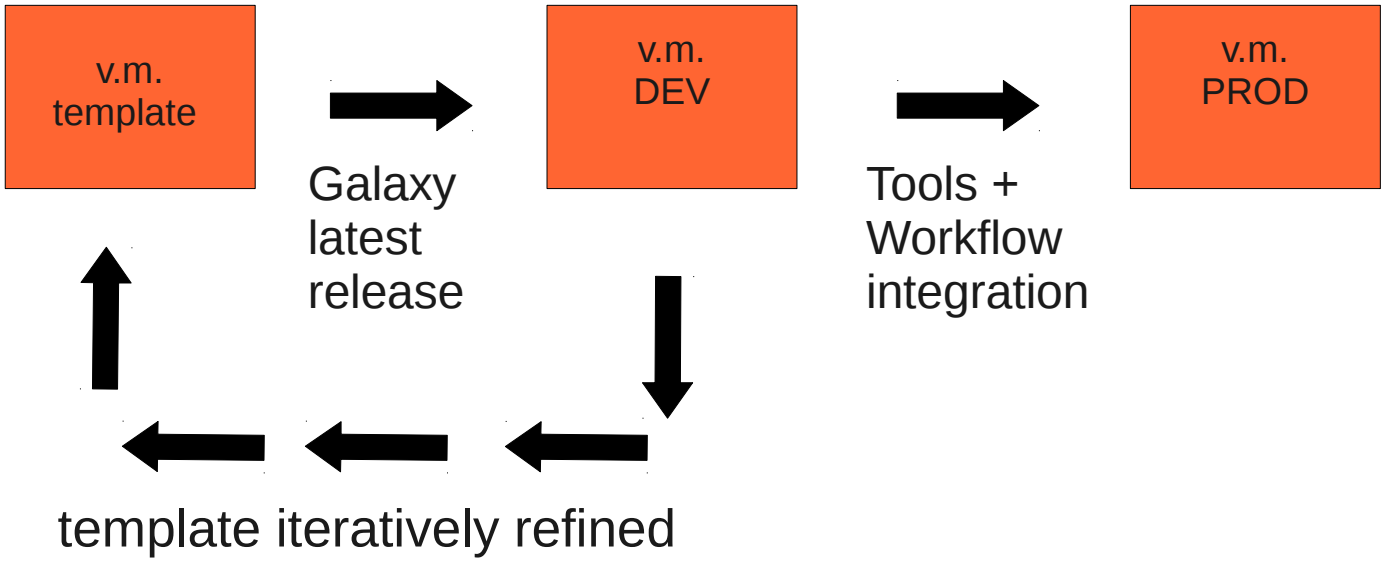


- Stage 1 :
  - Build a VM image with one of URGI's workflow inside
  - Send a small crew for exploration : 1 netsys + 1 dev
  - One month later a prototype :
    - A machine image
    - A template for image creation

- Stage 2 :
  - Improve the prototype with all URGI's workflows and toolboxes
  - All the crew for this mission
  - 3 months later : a new instance in production !



Highlight (i)

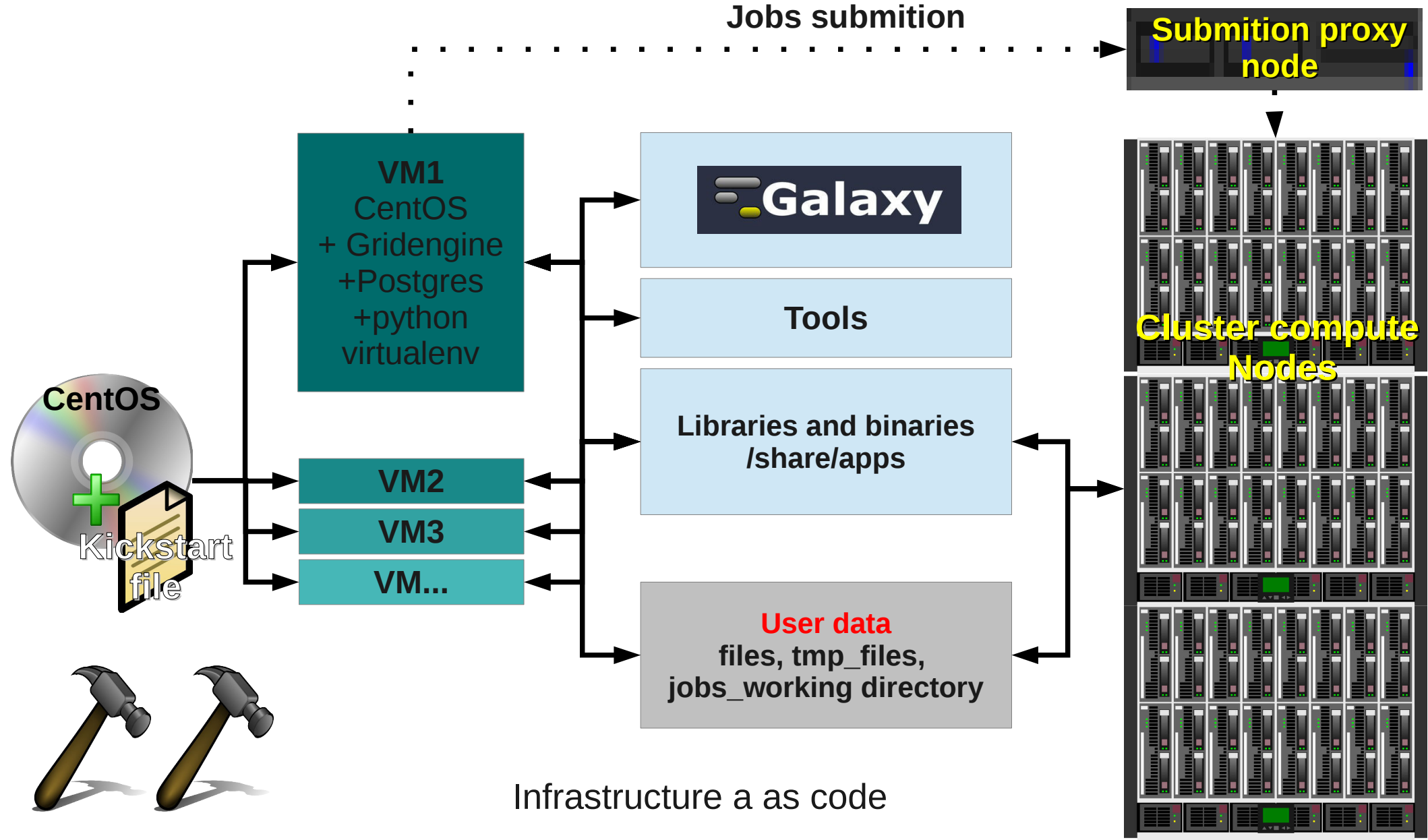


- template construction :
  - too huge for a single man (netsys admin)
  - skills transfered to the team …

Collaboration

skills

Highlight (ii)



Infrastructure a as code

Summary

- Collaboration ☐
- Infrastructure as a code ☐
- Continuous Delivery ☐

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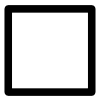
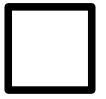

Summary

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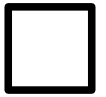
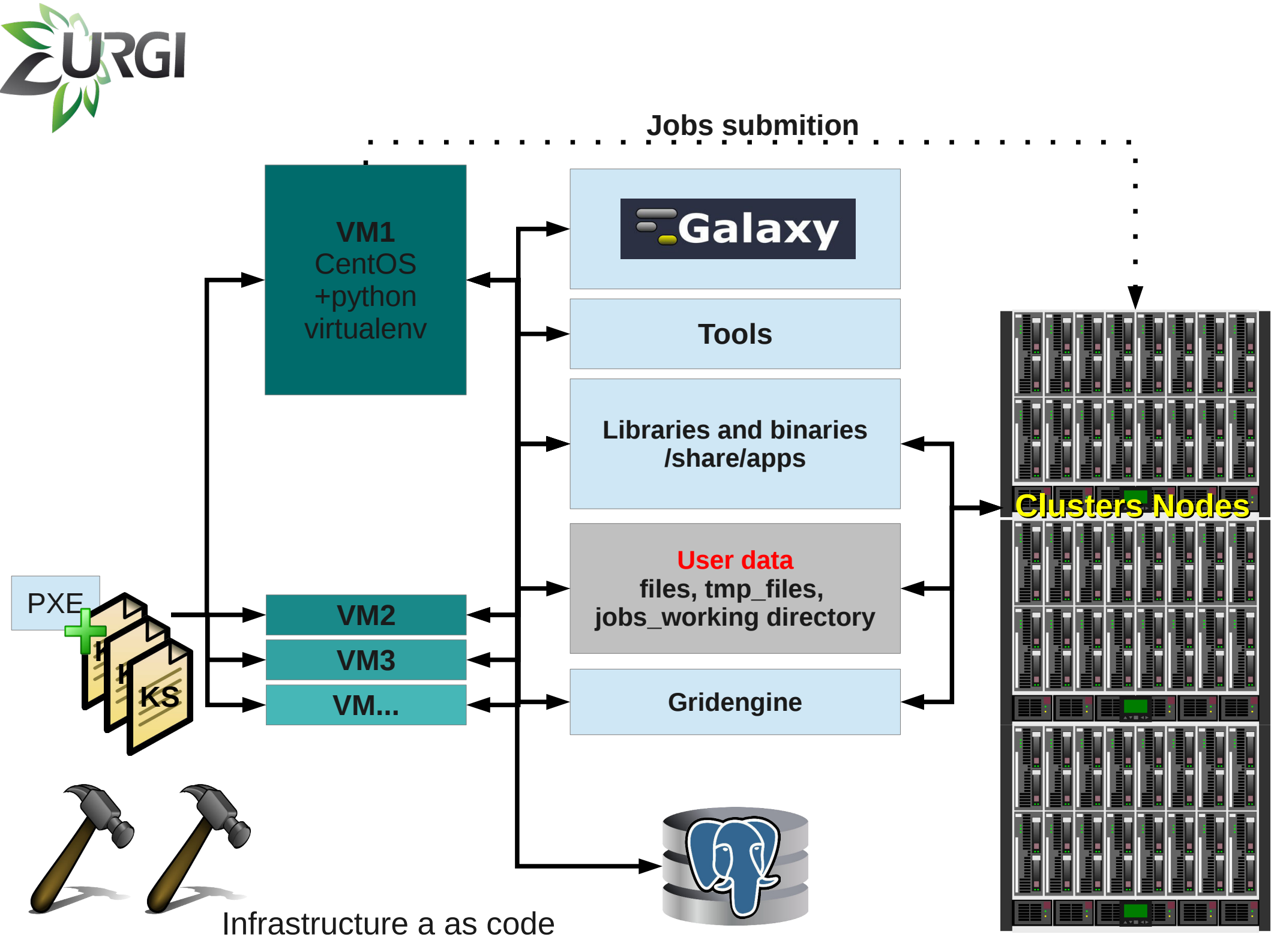
- Infrastructure as a code
- Continuous Delivery




Jobs submition
VM1
CentOS
+python
virtualenv
Galaxy
Tools
Libraries and binaries
/share/apps
User data
files, tmp_files,
jobs_working directory
Gridengine
Clusters Nodes
PXE
KS
VM2
VM3
VM...
Infrastructure a as code

Summary

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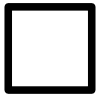
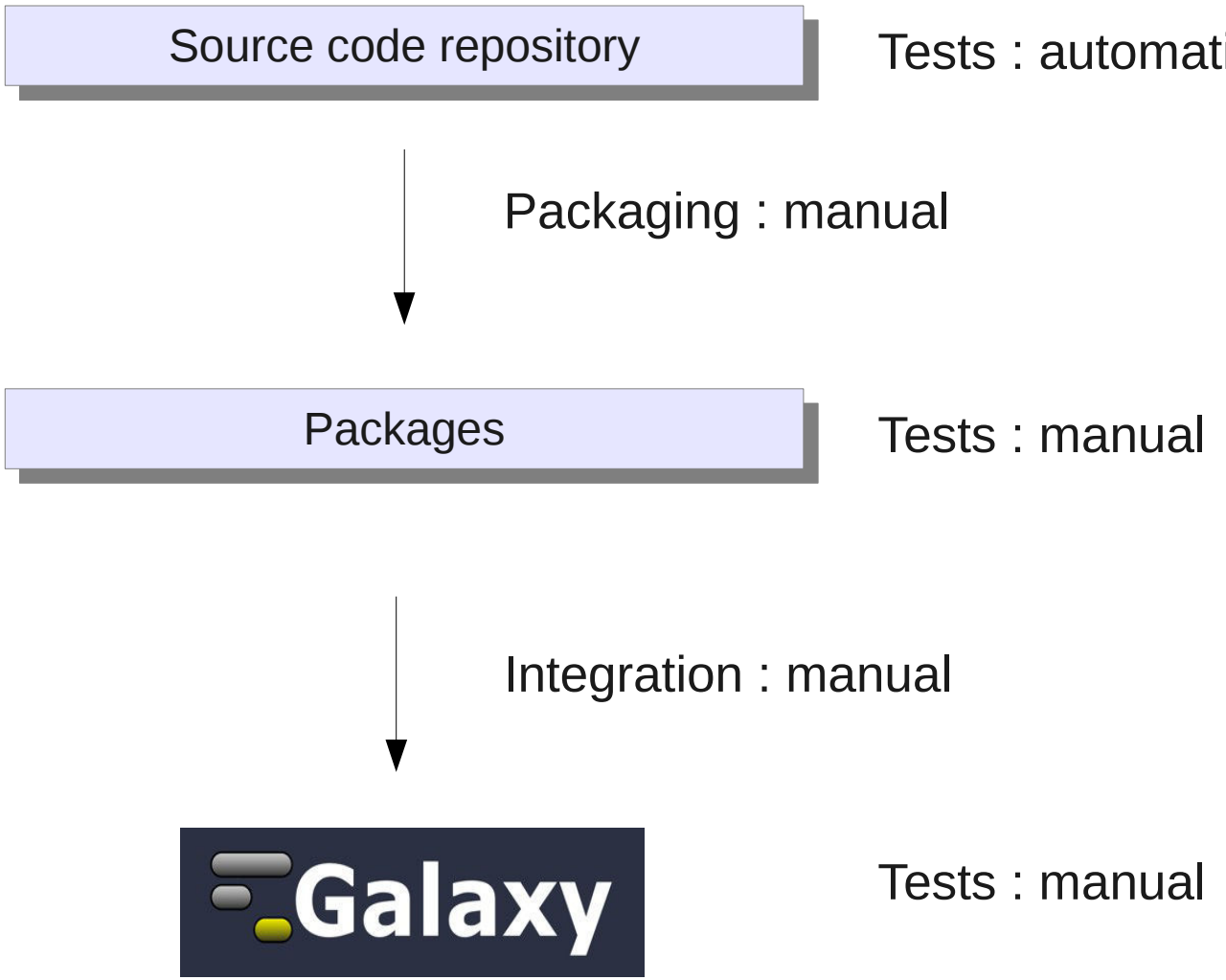
- Continuous Delivery



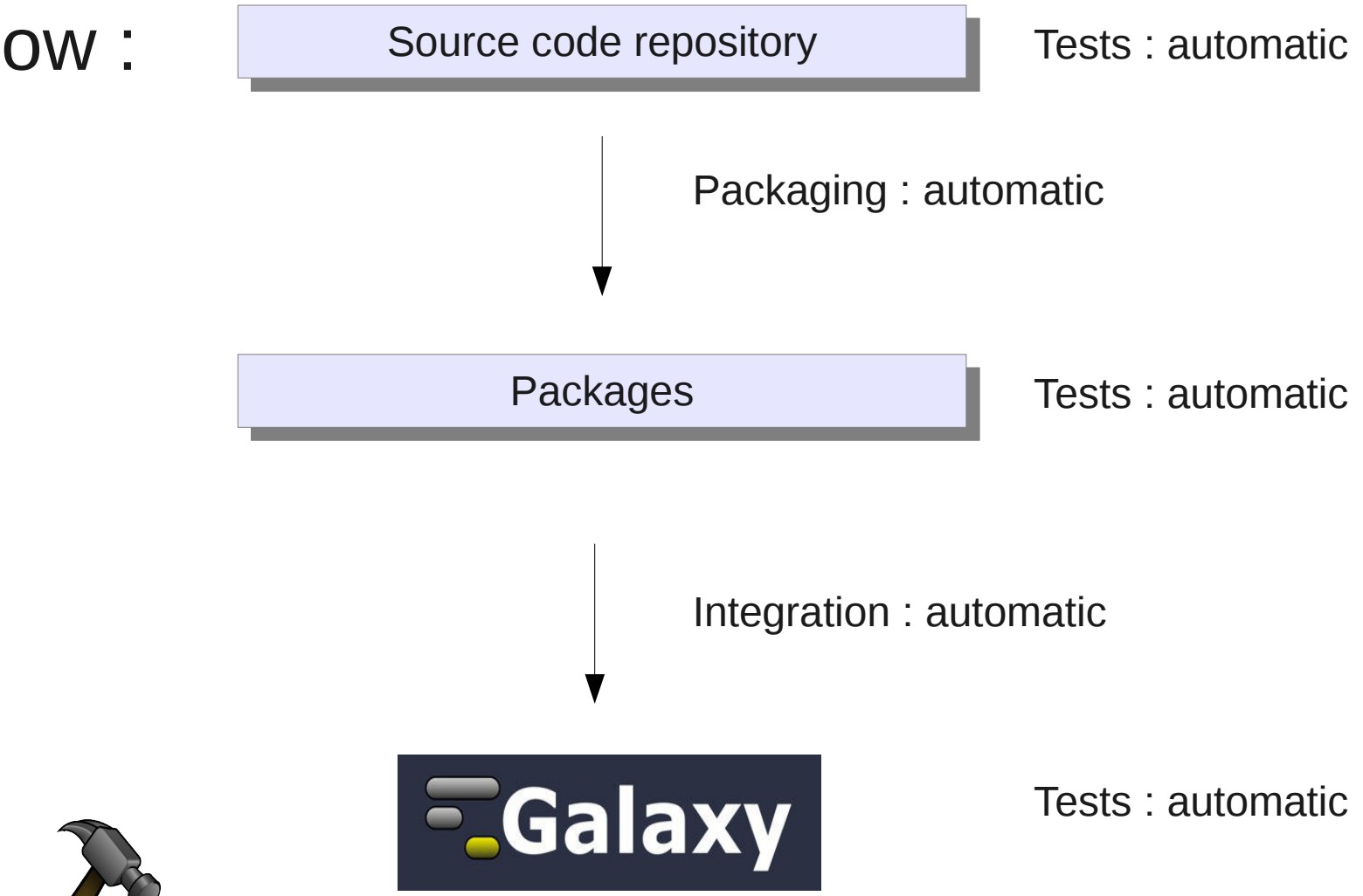
Continuous Delivery applied to our code ...

- Today :



Continuous Delivery applied to our code ...

- Tomorrow :



A New Team is born ...

- Jonathan Kreplak
- Véronique Jamilloux
- Françoise Alfama
- Nicolas Lapalu
- Mark Moisette
- Claire Viseux
- Tina Alaeitabar
- Timothée Chaumier
- Hadi Quesneville

Thank you for your attention !

« May the Force be with you ! »

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