Orange
How LFN projects contribute to service provider transformation

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Transformation
How to survive in a Volatile, Uncertain, Complex and Ambiguous world?

“How some people don't like change, but you need to embrace change if the alternative is disaster.”
Elon Musk
Open Source is no more an option
No company can guarantee a full control of the full stack

<table>
<thead>
<tr>
<th>Project</th>
<th>LOC</th>
<th>Contributors</th>
<th>COCOMO model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux Kernel</td>
<td>36.6M</td>
<td>20,276</td>
<td>12,369 years</td>
</tr>
<tr>
<td>Kubernetes</td>
<td>1.5M</td>
<td>2,800</td>
<td>438 years</td>
</tr>
<tr>
<td>OpenStack</td>
<td>13M</td>
<td>11,600</td>
<td>4,102 years</td>
</tr>
<tr>
<td>ONAP</td>
<td>4.3M</td>
<td>1,229</td>
<td>1,257 years</td>
</tr>
<tr>
<td>ODL</td>
<td>3.9M</td>
<td>1,242</td>
<td>1,167 years</td>
</tr>
<tr>
<td>OPNFV Functest</td>
<td>15,000</td>
<td>50</td>
<td>Not estimated Yet</td>
</tr>
</tbody>
</table>

Src: openhub.net
Automation is no more an option

<table>
<thead>
<tr>
<th>Project</th>
<th>Last change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux Kernel</td>
<td>Some seconds ago</td>
</tr>
<tr>
<td>Kubernetes</td>
<td>Some seconds ago</td>
</tr>
<tr>
<td>OpenStack</td>
<td>Some seconds ago</td>
</tr>
<tr>
<td>ONAP</td>
<td>Some minutes ago</td>
</tr>
<tr>
<td>ODL</td>
<td>Some minutes ago</td>
</tr>
<tr>
<td>OPNFV Functest</td>
<td>Depends of Cédric</td>
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</tbody>
</table>
We, Orange, already started our journey

“Do the difficult things while they are easy and do the great things while they are small. A journey of a thousand miles must begin with a single step.”

Lao Tzu
Automate, automate, atomate, anytime anywhere

Harmonize & Simplify the way to manage tests: Xtesting

Manage complex CI chains: Chained-CI

“The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficiency operation will magnify the inefficiency”

Bill Gates
**Xtesting**

- Allow the **developer** to work only on the test suites without diving into CI/CD integration

- **Simplify test integration** in a complete LFN-based CI/CD toolchain (e.g. Jenkins, Testing Containers, Test API and dashboard)

- Allow a **proper and robust design** and verify multiple components in the same CI/CD toolchain (OpenStack, Kubernetes, ONAP, etc.)

- Easy to use and very **useful for any CI/CD toolchain**
Chained-CI

Chain gitlab-ci to **create complex CI chains**: ONAP from scratch on bare metal servers

**Today**
- **In LFN**: as many CI/CD systems teams as project, In ONAP at least 3 CI systems in //
- **In Orange**: 1 CI/CD system for all the projects (hardware, team, CI time mutualization)
The main challenge : us

Internally
- NFV transformation is an organization transformation
- Training programs launched « Back to (Code) Source »
- « Magellan » initiative aiming to adopt automation and Open Source best practices and generalize the automation of the installation and tests

A new deal with the ecosystem
- As Infra and VNFs are decoupled, Infra must be trustable and VNFs always testable
- Tests must be part of the product
- Tests can use Open framework such as xtesting to be easily integrated in CI chains
Conclusion

- Open Source best practices are a corner stone of the transformation
- Automation is clearly not an option:
  - Less people, more complexity
  - The ecosystem is less and less specific and “We are not Special”
- We learned a lot thanks to LFN projects
- We are contributing, and reusing more and more community code for our needs even if it takes time
- LFN projects must keep « really » Open Source otherwise we will have to fork:)
Thank you