A more flexible, higher performance and more secure cloud: the **OpenStack** opportunity

The "Experience notebooks" collection by Alliancy, le mag a magazine in partnership with

Business Services orange™

Powered by

(intel)

Cloud Technology

You have probably already heard about it, but perhaps you are still wondering what it can do for your company. OpenStack celebrated its 5th birthday in July and Open Source has never been as popular in Cloud computing. Its resonance among professionals and on the market is such that the majority of major technology players have joined the OpenStack Foundation. In the field, the reality of projects becomes tangible when businesses and public entities impose OpenStack as a condition for their important Cloud projects. Faced with the stakes of performance, flexibility and security but also independence and sovereignty, OpenStack's appeal stems from the responses it can provide.

However, do companies hold all the cards when it comes to grasping the ins and outs of OpenStack for their Cloud strategy? In this collection, Intel and Orange Cloud for Business aim to review the main keys of OpenStack and to start a debate on a subject that was until very recently the domain of technical experts. Nonetheless, today understanding the distinguishing features of OpenStack, an essential element of the international Cloud landscape, has become a matter of premium importance in enabling directors, CIOs and their companies to move more efficiently forwards on the road to their digital transformation. OpenStack has enjoyed increasing media exposure in recent years. This notebook aims to provide the insight that will allow professionals to go beyond the buzz and gain a firm grasp of the subject.

We felt it more important than ever to enable businesses to accelerate, to give voice to the players in the field who each day experience the issues raised by this strong movement of professionals to the Cloud, and who directly participate in the maturity of a community such as OpenStack's. We also wanted to raise, within the space of several pages, the questions that must be the foundations of OpenStack Cloud projects, in order to encourage thinking among businesses. By providing examples, both in France and on the international stage, which show how this technology has been chosen in the strategic guidelines of well-known companies, we are also seeking to open a debate: do you identify with such ambitions, as we are all faced in our respective activities with turmoil and the necessity for smarter innovation in order to provide better service to our customers?

Philippe Laplane
Chairman of the subsidiary OCfB SAS

Stephan Hilby
Cloud Market Manager
EMEA - Intel

The OpenStack opportunity

The open source world is constantly assisting businesses in their transformation, by supplying the tools that meet their requirements for flexibility, stability and performance, whilst addressing the cost factor. Whilst all sectors are seeking to seize the advantages offered by the Cloud, open source once again puts forward especially attractive arguments. Among them is OpenStack, which in the space of five years has become a major reference.

Does open source drive innovation and accelerate the development of businesses? In a world where the digital sphere is predominant in all activities and in which companies are expected to demonstrate their ability to react swiftly every day as well as their capacity to quickly adapt their products and services to the changing needs and uses of their customers, the answer to this question is far from inconsequential. In this respect, a survey conducted by the consultancy firm PAC at the Paris Open Source Summit 2015, provides some elements for reflection. Asked to list the advantages of open source, 75% of the companies surveyed, irrespective of their size, indicated that it is an "unbeatable innovative factor" in comparison with proprietary approaches. Furthermore, approximately fifty per cent believe that open source is a "crucial catalyst for our development in digital technologies".

The convergence of open source and the Cloud at the service of businesses

At the same time, companies are increasingly turning to Cloud computing to provide themselves with the means to rapidly change, without suffering from inertia and dependency that normally come hand in hand with the use of conventional, fully-owned computing infrastructures. "The importance of infrastructures is relegated by the Cloud, enabling businesses to focus on the service that they intend to provide to their customers," summarises Philippe

Laplane, Chairman of the subsidiary OCfB SAS, the organisation that enabled Orange to cope with its transformation to the Cloud and which assists the professional customers of the French group to do likewise.

Over the last five years, the world of Cloud computing has witnessed the emergence, in parallel to the technology proposed by the major players in the sector (Amazon, Microsoft and Google for the public Cloud in particular), of a dynamic based on open source, for which OpenStack technology is one of the flagships. Launched in 2010, by NASA and the firm Rackspace, based on technological building blocks that met their immediate needs, OpenStack swiftly united a very broad community of companies and individual contributors who helped to develop the functions and the capacities offered by this Open Source approach to the Cloud. Five years later, the success and influence of OpenStack are undeniable: experiments with companies have given way to large scale deployments. For example, French government information systems agency DINSIC (which, since September 2015, has included the ETALAB mission on Open Data), with the assistance of Orange, has since last summer embarked on the transformation of the French State's infrastructures, in order to work with a virtual structure: the Cloud services that will be used by the ministries with a view to

analysing Big Data, for example, are based on OpenStack technology, in particular concerning sovereignty and independence, as well as the flexibility intrinsically provided by the uses of Cloud computing.

Thousands of developers are continually improving the open Cloud

The OpenStack summit that took place in Tokyo last October provided an opportunity to take stock on the actual maturity of this technology which is gradually imposing itself as a standard for the open Cloud, a fact that is backed up by the figures: OpenStack can today count on almost 4,000 developers whilst other initiatives, such as Cloud-Stack or Eucalyptus can only count on 326 and 22 respectively. Similarly, more than 50 international firms contribute each month to this community, among whom are some of the leading lights on the world stage of technology, such as Intel. "It is a good means of highlighting new technologies, because it is obviously easier to modify an Open Source code rather than waiting for the licence of a third-party product to be ready to benefit from such progress," notes Marco Righini, OpenStack EMEA Solutions Architect for Intel, when questioned about the American processer giant's strategy concerning the open Cloud. "We have gained momentum. The selection between Open Source technologies is very Darwinian and OpenStack has proved to be

> ### "The Cloud enables firms to focus on the service that they intend to provide to their customers"
>
> **Philippe Laplane**
> Chairman of the subsidiary OCfB SAS

the reference solution for management of the Cloud. Over the last 3 years, the community has demonstrated the proof: we have reached a point of maturity," adds Morgan Richomme, NFV engineer with Orange, who describes OpenStack as the "Linux of Cloud computing" in reference to the most well known open Operating System (OS), much appreciated by businesses. On top of everything, it boasts an as yet unattained level of modularity and a variety of functions. With a new release every 6 months, it also possesses the assets of speed and regular scalability, allowing it to remain at the cutting edge of technology.

Seizing the opportunity

Irrespective of the people surveyed, the advantages that companies can obtain from applying Open Source technology to their Cloud strategy can be easily identified. OpenStack provides businesses with the opportunity to possess a tool that enables increased flexibility for their projects and their teams, without having to be dependent on a specific supplier. When an CIO takes too long to pick up on the opportunities pinpointed by various sectors, then, over the course of time, companies end up doing without them thanks to the public Cloud, such as the service provided by Amazon, with "Shadow IT" in the bargain and risks linked to the Service Level Agreement or to data confidentiality issues which are an increasingly important matter in businesses' thinking. As it happens, OpenStack possesses the advantage of being able to offer everyone the possibility to access the same tools which have been instrumental in the success of

a Cloud such as Amazon's. It does this in the public Cloud, thanks to players such as Cloudwatt, who have built themselves around objectives of Cloud sovereignty, but also on the private Cloud, by directly handling the ins and outs of its technical development, without licence costs. "The justification of this change deserves a new vision of innovation, a better time to market," explains Sebastian Braun for the OpenStack pure player, Mirantis. This is, in short, the desire to do better within the framework of companies' digital transformations.

So why do we not see more OpenStack projects? Firstly, because, even if its growth and reputation are exponential, it is still a subject in its youth. This situation is in the process of changing, however: after having raised a good number of questions about their Cloud strategy, major firms are taking action. The example of the DINSIC in 2015 is a guarantee that the forthcoming years will witness an increasing number of organisations demonstrating what they are capable of doing.

KEY FIGURES

3971 The number of developers involved in the improvement of OpenStack

4$_M$ The number of coding lines in Liberty, the latest release of OpenStack

92% The number of CIOs who believe that their infrastructure is not flexible enough *(IDC, 2014)*

Nevertheless, another stake for professionals is knowing how to seize such an opportunity in a suitable framework. As regularly underlined by specialists, shifting to the Cloud due to media and marketing hype on the subject is probably the worst thing to do, as is turning to OpenStack to surf on the wave: the issue of the technological project and the Cloud strategy that a company wishes to implement, even if they use Open Source, cannot be dissociated from a business vision, revolving around concrete business needs (as shown in the illustration).

Looking beyond technology to transform your company

In particular, wanting to gain more flexibility or hoping to boost the innovative capacity of your company in order to face up to the competition is not merely a question of technology. Indeed, this is the very reason that the digital transformation of businesses is so crucial – and complex – today. To successfully take advantage of the Open Source Cloud's relevance, businesses must be able to roll out a vision for the transformation of their activity, as well as the impact that it has on its organisation, its management and even on its concept of innovation, which in the past has often been restricted to R&D departments. Flexible methods, which in particular are spreading their reach through firms' CIOs, are one of the aspects of such transformation: the new rhythm that they must help to inject into CIOs, for a greater adherence to business expectations, objectives linked to an OpenStack project. Such thinking is different from a great number of traditional corporate cultures, especially with regard to CIOs.

After raising a good number of questions about their Cloud strategy, major firms are taking action

"A business on its own cannot do everything: settling for downloading source code from the internet free of charge, as is reported sometimes, incurs a high risk of ending up making a complete hash of it…" points out Morgan Richomme. The answer is not to change everything from A to Z from one day to another, even less so in the belief that all the ingredients of the recipe are already present in the company. This is exactly why an organisation like Orange Cloud for Business prefers to bank on the quality of support dispensed to professionals in their transfer to the Cloud, in order to allow businesses to generate greater value. The opportunity represented by OpenStack is not just a technological choice: it is a means, for a company that has prepared itself, to meet the challenges of digital transformation. ∎

Acclaim for the OpenStack dynamic at the 2015 Paris Open Source Summit

The 2015 Paris Open Source Summit gave pride of place to the Cloud at the request of business leaders. The conferences allowed a demonstration of OpenStack's dynamism.

"*Who has heard of OpenStack?*" In the "Barcelona" room of the Dock Pullman, almost all hands were raised. At this conference dedicated to open innovation, the speakers shared their experience regarding Open Source and OpenStack, via, in particular, the intervention of Thierry Carrez, the foundation's Director of Engineering. He reviewed the advantages and difficulties involved in the deployment of this technology. More generally, virtualization attracted many inquiring minds to the first edition of the Paris Open Source Summit, a merger of the

Open World Forum and the Linux/Open Source Solutions fair. In total, approximately twenty conferences were held concerning the Cloud. This choice was impelled by the big decision makers, via the CIGREF and CRIP networks, both summit partners. "*We had discussions with them before the call for contributions. The Cloud, containers and virtualization immediately stood out,*" explains Véronique Torner, chairwoman of the programming committee. "*As a result, we decided to give them top billing and the decision-makers validated these themes*".

The momentum of OpenStack
During the summit's two days, the major players shared their experience of OpenStack and Open Source. In his keynote speech, Christian Paterson, Head of Orange

Open Source Governance mentioned the advantage of contributing for telecoms providers. *"Today, there are thousands, even millions of initiatives that use Open Source and which possess monetary values. Furthermore, Open Source is a social catalyst that breaks up silo mentality within and between organisations". "In IT terms, contributing to transferring code is classic, but on major infrastructure projects, players such as OpenStack have gained significant momentum,"* indicated the engineer. PSA Peugeot Citroën, a debutant in the open source world, are already entirely convinced. *"We did it to pool our developments, for better productivity, to better capitalise or core business concerns and for better integration into the new Cloud and Big Data architectures,"* said Marius Mattei, SeedStack Pro-

"Who has heard of OpenStack?"

Almost all hands are raised in response to the question put by **Thierry Carrez**, Director of Engineering for the OpenStack Foundation

ject Manager and Senior Architect for the car manufacturer. Even the French State praised the benefits of open source chosen several years ago. *"We are convinced that Open Source contributes to providing much more resilient information systems especially when they are under heavy demand,"* testified Guillaume Blot, Head of architecture and urbanisation at the French government information systems agency DINSIC. During the summit, the French players from both the private and public sectors thus illustrated the dynamism of OpenStack with conviction. The trend has been confirmed: Open Source in France does not just simply involve small projects, but is becoming a credible alternative for the Cloud, the internet of objects, Big Data or also network virtualization. ∎

OpenStack in their own words

"The figures don't tell lies: OpenStack is the most Active Open Source Cloud project and perhaps the most active Open Source project of all time."

Sean Michael Kerner, Editor in Chief at Datamation and Internetnews.com

"There will be Big Data analysis on OpenStack as of 2016. It has the maturity."

David Allès, Senior Cloud Engineer - Orange

"Users also want to unite to collaborate among themselves and provide feedback on use cases. Federations of OpenStack operators are forming to see if they are encountering the same difficulties or if they have the same priorities. For us, this provides comprehensive feedback."

Thierry Carrez, Director of Engineering - OpenStack Foundation at the 2015 Paris Open Source Summit

"It is clear that OpenStack is a strong attraction for young talents whilst at the same time businesses are finding it difficult to hold on to them. OpenStack teams have the same appeal as start-ups!"

Morgan Richomme, NFV Engineer - Orange

"If you always do what you always did, you will always get what you always got."

Albert Einstein

"Businesses need to identify the Cloud use case that will be of great significance for their activity"

Thierry Chaumeron
Marketing and Product Director - Cloudwatt

Founded in September 2012, Cloudwatt provides a French sovereign public Cloud. From the beginning, the firm has placed its trust in OpenStack to support its approach. Thierry Chaumeron, Marketing and Product Director at Cloudwatt, explains the thought process that a business needs to implement in order to benefit from the advantages offered by OpenStack..

Why did you choose OpenStack right from the start?

Cloudwatt's approach is based on the quest for sovereignty applied to Cloud technology which, by nature, is oriented towards the international stage. This involves several points: technological independence, using mature technology with the possibility of significant developments, control of cost issues, but also the power of an ecosystem. OpenStack brings together all these characteristics. As a result, the developments are genuine: a release every six months includes key changes. Liberty, in October, is the biggest yet and has seen OpenStack hit the mark of 4 million lines of code. Its maturity is also concrete: an increasing number of companies are using OpenStack not to experiment, but for their critical applications. Businesses as diverse as Yahoo, Comcast, Disney, Walmart, Wikipedia or even CERN have all grasped the advantages of this technology for their activity. As regards the ecosystem, many players in IT and telecoms use and sell OpenStack solutions, as well as significantly contributing to the community.

Are these sufficient reasons to take the plunge with regards to companies that are consolidating their Cloud strategy?

Companies that are just starting to take an interest in the subject and which want to develop a coherent Cloud strategy generally realise that there are many options available. Many questions are asked and effectively the nature of the technology used is one of them. To know whether a company will benefit from OpenStack, it is paramount for them to clarify their needs. A good starting point is to identify the Cloud use case that will be of great significance for its activity. For example, this can be the desire to accelerate the time to market by developing its applications in shorter cycles, so as to be able to provide services to its customers in a more regular fashion than the competition. An e-commerce firm

will need Web applications that boast considerable flexibility and scalability in order to handle peaks in traffic. A media firm will require the same flexibility whilst needing to take advantage of object storage methods to guarantee excellent access to its thousands of photos, videos and streamed content. For such companies, it is typically possible to draw a direct correlation with the impact on the organisation's turnover and the advantages of the Cloud, and then more specifically OpenStack.

Are there more general cases of use?

Better management of back-ups and archiving are important for many companies, as are storage and sharing of working documents in collaborative mode. An increasing number of organisations also perceive high performance calculation for analysing Big Data as a means of standing out from the crowd on their market. In all cases, if,

on a daily basis, a company is confronted with one of these cases of use, it would be extremely well advised to move towards a 'modern' Cloud. From that point, it can turn to GAFA public Cloud offers, such as Amazon Web Services, Microsoft Azure or also Google Services... But if it is concerned by the issues of confidentiality, sovereignty and compliance with data protection recommendations, it will enjoy greater advantages with a sovereign Cloud such as the one we have invented at Cloudwatt which is entirely based on OpenStack. For the most mature, who wish to benefit from this durability, independence and capacity for standardisation without solely relying on a public Cloud, the same approaches are true for a private Cloud.

Is it easy for a business to appropriate OpenStack?

The answer to that question has two levels.

"These are the advantages of the Cloud, as well as its benefits of standardisation and independence"

Thierry Chaumeron
Marketing & Product Director - Cloudwatt

When a company, or the individuals it comprises, are users of OpenStack in a public Cloud configuration, there is nothing simpler. These are the advantages of the Cloud, as well as its benefits of standardisation and independence. In other words: creating an account on a public Cloud based on OpenStack can be accomplished in several minutes and deployment of an application you need can be done in seconds. Thereafter, there is a return to the daily functions employed by the user. It takes on a different dimension however, since being an OpenStack administrator and independently creating a Cloud that runs such technology requires greater vigilance. You must already be aware that it is the company's "Cloud-ready" applications that will benefit from this approach. Consequently, they should be clearly identified and, in the opposite case, those which are not compatible should be marked out. If a business uses software suites, it must analyse their capacity to integrate the Cloud, even if this means challenging the software editor. In this respect, the administrator will have to manage the complexity inherent to a hybrid information system, because the existing one will not be able

Cloudwatt

Cloudwatt was founded in September 2012 by Orange, Thales and the Caisse des Dépôts et Consignations, at the impetus of the French State, on order to call upon European sovereign entities. Since March 2015, Cloudwatt is a fully owned subsidiary of Orange that falls within the scope of Orange Cloud for Business, so as to accelerate the deployment of public sovereign Clouds in France and Europe.

to immediately and fully rely on a private Cloud. OpenStack makes it possible to provide a welcome layer of abstraction.

From what point is it advantageous to take the plunge, depending on different uses?
Generally, we recommend an initial phase during which the company will test and get used to the Cloud, in order to gain awareness of what it can achieve with it, as well as what it changes (or not) in its use of the applications it needs on a day-to-day basis. Afterwards, a production project can be envisaged and the tools required to support the applications can be envisioned, such as monitoring tools. It is therefore a progressive movement that may possibly go as far as a private Cloud, with OpenStack as orchestrator, enabling businesses to see past VMware technology, Open Source technology and containers that businesses already use, to move towards unification and harmonisation of the information system. In this respect, the results are often better than when companies made the choice of unification in the past: with OpenStack, the entire industry is working towards compatibility; there is no need to deploy efforts to persuade a specific player that might block such a quest for in-house standardisation. However, the efforts a business is willing to deploy to meet its needs need to be ascertained: if it is a question of using a virtual machine for very specific requirements, other simpler methods exist; if the need concerns a subject of central importance for the company, the leverage will be much greater.

Is OpenStack right for your business?

1

The first question to be asked: What do you want to do with the Cloud?

Thinking of using OpenStack requires a thought-out Cloud strategy :

• Which aspects of your activity will benefit from the flexibility or the computational power offered by the Cloud?

• What are the core business concerns? More specifically, in which use cases will the Cloud make a difference?

2

Advantages to be considered:

What are the arguments in favour of OpenStack?

• A standard: for greater compatibility
• Open Source: no licences or captivity
• A community: for greater scalability and security
• Rich and modular: for multiple uses
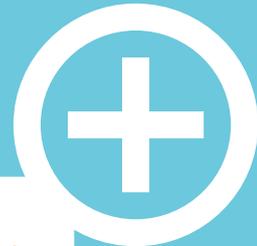
3 Which OpenStack Cloud should you use?

Public Cloud [an SMB asset]

An opportunity to ramp up:

- Simple to use
- Quick scalability and test capacity
- Sovereignty of French players
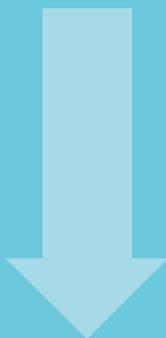
Virtualised private Cloud

An extension to your information system:

- The serenity of a private zone
- An opportunity to reduce costs
- Secure connections

A fully owned private Cloud

A formidable tool box:

- Scalability, flexibility and a wealth of applications
- Harmonisation of hybrid uses
- Attract young talents and foster their loyalty

"The biggest problem that CIOs have to tackle is the acquisition of additional knowledge which will enable them to take advantage of the Cloud strategy. Developing an application natively for the Cloud is very different because the skills and state of mind must no longer be the same. The vision of what you want to do and how to do it should change the CIO."

Marco Righini
OpenStack Solutions Architect, EMEA, Intel

The 4 keys for a winning OpenStack

Trust

The technology used is not the be all and end all. A trustworthy public Cloud must be transparent with regard to data location, identification of the personnel who run it and provide a very clear contractual framework (what degree of reversibility is possible, who is responsible for what, what are the SLAs?).

"Cloud-ready"

To imagine and translate gains in concrete terms over the short-term, businesses must conduct identification of their "Cloud compatible" applications and focus on those that are "Cloud native" which will make the best use of OpenStack. Wanting to transform old applications at any cost is not recommended.

Support

Businesses cannot do it all on their own or devote all their energy to becoming total experts in OpenStack: there are many support possibilities, concerning strategic thinking, regarding deployment and management of a hybrid IS and relating to the optimisations to be implemented subsequently.

Culture

The flexibility offered by the Cloud in OpenStack is a tool for the benefit of a company's transformation. It is not the source of all change: a change of culture, processes, management methods and the importance accorded to innovation is essential for the company to avoid ending up with a "still born" OpenStack private Cloud.

The right OpenStack modules for your project

For businesses, OpenStack is a toolbox with infinite possibilities, thanks to the number of valuable elements and components provided by its community. A variety of modules are available, but nine of them in particular can be found at the heart of many projects. Here is an overview of them, with insights from Xavier Gauvrit, IaaS Manager at Cloudwatt.

Keystone

The module: this identity service makes it possible to establish the directory of OpenStack Cloud services and Users, as well as their various authorisations.

The expert's opinion: *"It is the cornerstone, the strong-box that will be used in more than 95% of projects. It manages Cloud security and therefore is of absolutely central importance. Depending on the size of the Cloud concerned, there can be a choice between several types of deployment and configurations. In general, for a company setting up its own small private Cloud, this will be a relatively simple question, even if this module is sometimes a little "wordy". For bigger sizes, with several datacentres or, as is the case for us, a public Cloud, greater vigilance will be necessary for encryption options or installation of a cache. There are also several possible back-ends for Keystone and it is possible to link it with the company's LDAP directory".*

Swift

The module: the object storage service was present, alongside Nova, since 2010, in "Austin", the first version of OpenStack. Swift enables simplified storage management, without too much concern about the type of hardware used.

The expert's opinion: *"Swift is probably the most stable, the most robust and easiest module to use, mainly because it has been around since the beginning, so there are no surprises involved in its usage. It is also a module that can be use as a stand-alone module and a majority of companies, in the same way as Cloudwatt when we embarked on our approach, start off with it for storage. The module allows data integrity and redundancy to be ensured, with up to three levels of replication".*

Nova

The module: Nova is the second central brick of OpenStack that has been present from the start: it enables management of computational resources and is therefore an essential brick for the virtualization layer of an OpenStack Cloud, through control of the hypervisors. Without Nova, there would be no VM. As in the case of Swift, Nova does not require specific hardware.

The expert's opinion: *"Nova is also used at a rate of more than 95%. The possibilities offered by this module are considerable: with Nova Scheduler, which chooses the physical hardware on which to run virtual machines (VM), it is possible to incorporate very strict rules and criteria, using actual business needs as a basis. As such, there is a danger of unnecessary complication if care is not taken, but most of the time, companies will settle for very simple criteria for their private Clouds and Nova proves to be very flexible to use".*

Neutron

The module: Neutron makes it possible to create networks, connect instances to them and manage both traffic and security in the OpenStack Cloud. Its logic follows modern SDNs (Software-Defined Networks).

The expert's opinion: *"It is often reckoned that Neutron is a sort of OpenStack within OpenStack: the catalogue and its possibilities are immense. Quite frankly, whilst the network is absolutely crucial in from a virtualization viewpoint, this module will demand the most time and effort in terms of configuration. For a business, this part can quickly become troublesome. Meticulousness and vigilance are required, especially concerning links set up with the hardware. The choice of Neutron plug-in (openvSwitch, linucbridge, OpenContrail) will depend on the size of the platform and its expected functions".*

OpenStack conceptual architecture
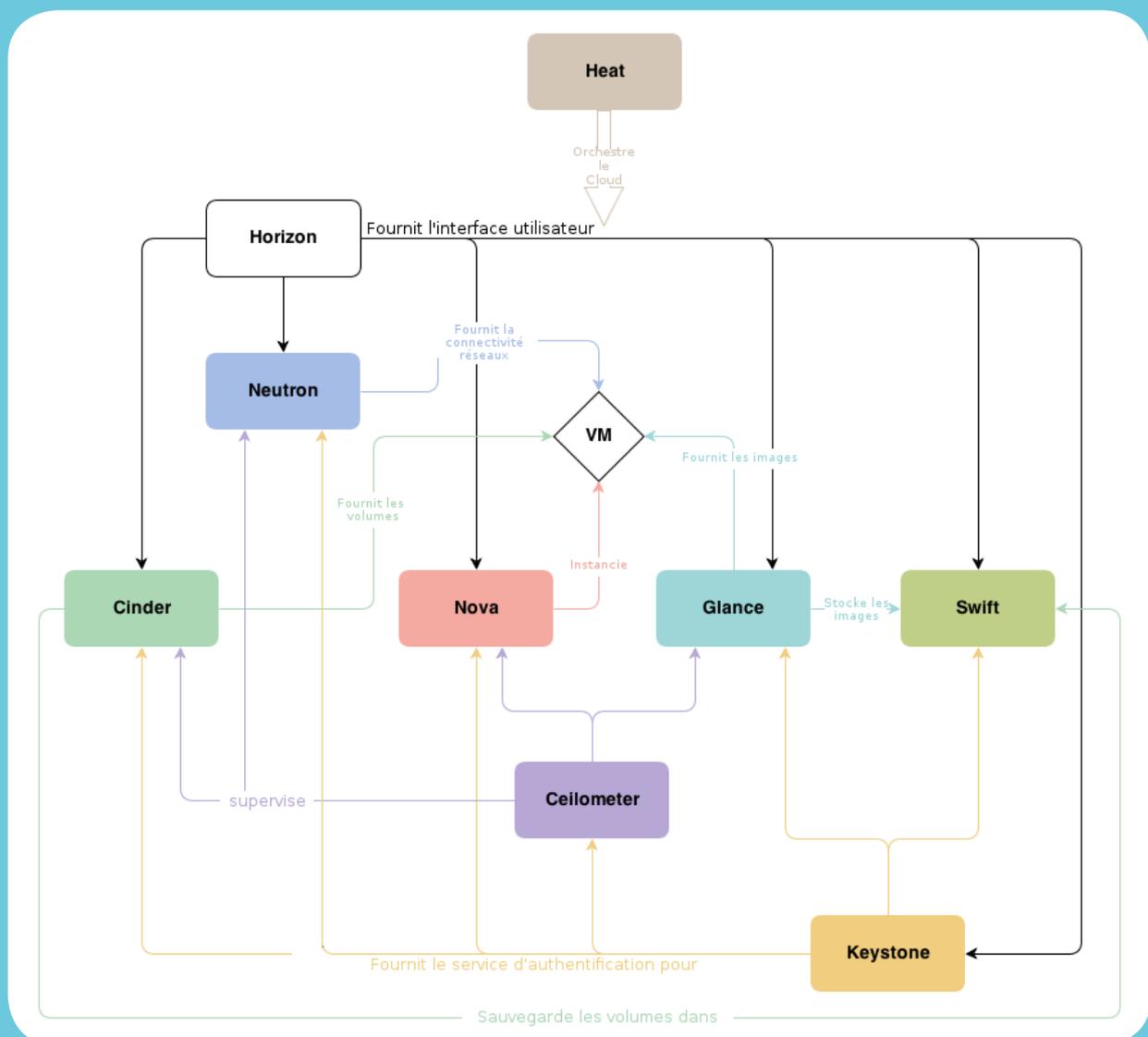
Source: CC BY 3.0 OpenStack Community

Cinder

The module: Cinder allows storage in block mode with OpenStack and meets distinctly different requirements to Swift, which is normally preferred for multimedia elements. This module enables storage of persistent objects such as VMs.

The expert's opinion: *"Cinder is a fairly stable module. It possesses plenty of back-ends and the possibility of using a very wide range of proprietary storage platforms without too much difficulty. As a result, businesses don't run the risk of being limited by past practices. Furthermore, in comparison to modules like Nova and Neutron, it is very clear that Cinder is much simpler to configure and use".*

Ceilometer

The module: Ceilometer is the telemetry service that in particular enables, through links with other applications, invoicing or actions determined in accordance with a number of instances in operation or with the duration of their operation. The module gathers the metrics that can be used by other services.

The expert's opinion: *"Ceilometer has a bad reputation and businesses embarking on the OpenStack adventure could be wary of such rumours. However, the picture is not so bleak: this module is especially poorly designed as a major basis for a public Cloud and this is what damages its image. Nonetheless, for a business whose concern is its private Cloud, it is an entirely different matter. Its use is therefore recommended on the condition that the data volume and retention periods are appropriate. On the other hand, businesses should be wary if they have to keep large volumes over several weeks. It is under these conditions that performance problems become visible. In light of this situation, the community has invested in a new component, Gnocchi, which allows for lower storage volumes".*

Horizon

The module: Horizon is the dashboard enabling management of one or more OpenStack Clouds via a graphic interface. This console is a web application regularly personalised by the Cloud operators.

The expert's opinion: *"Horizon is stable, with a strong "out of the box" character, but falls down somewhat in terms of ergonomics and ease of deployment. By nature, in relation to how the OpenStack community works and the dependence of this module on others, the console is not as up-to-date as could be desired, in particular from the uses and web services point of view. Depending on the maturity of the teams within a company that will use it, these issues will be more or less problematic: if they are very legacy-oriented, they will not encounter any problems; if they are used to web micro-services and are looking to go further, using APIs will often be more advantageous".*

Heat

The module: This orchestrator encompasses all the other modules in the way that it is the engine that launches and organises these components in accordance with templates determined by the company.

The expert's opinion: *"Out of the 9 core OpenStack modules, Heat, the orchestrator, is probably the sexiest. It enables deployment of more complex workloads, but is simple itself to deploy, as part of a VM for example, even before getting round to using a production infrastructure. Like Horizon, it is comfortably independent from the other components of the OpenStack Cloud. The main point where vigilance should be exercised with Heat concerns the management of upgrades, but the same is true for the other components and especially Nova/Neutron which are the most complicated to upgrade without interruption of the service; This is particularly visible for a public Cloud player that manages permanent rolling upgrades, but fortunately for a company that develops its own private Cloud, it will be possible most of the time to plan the periods of down-time scheduled for the upgrades without this causing problems".*

Glance

The module: Glance manages disk images, as well as their storage and distribution to instances which require them. Glance also handles large amounts of metadata concerning disk images.

The expert's opinion: *"Glance is a stable component that can be combined with SWIFT for storage of images and instances. It is one of the least complex components and the less troublesome to upgrade. One point to be wary of is the fine-grained management of image rights (public, private and shared)".*

What next?

Of course, many other modules are available for an OpenStack Cloud, such as Sahara, required for Big Data projects, or Manila for management of shared files… However, these components prove to be much more specific and situational. How can a business guarantee that the modules to be used are indeed the best for meeting its own requirements?

"The key is to draw the maximum from what the community has to offer, especially with regard to feedback," notes Xavier Gauvrit, IaaS Manager at Cloudwatt. *"OpenStack User Groups are a mine of information today because the members have made enormous progress in communication to help those who are new to OpenStack projects. It is possible to subscribe to mailing lists that deal with specific needs, take part in Q&A sessions or access the main FAQ with ease. The best piece of advice to follow would be to take it step by step: the community is very dynamic and a newcomer could end up inundated by a deluge of information. It is not worth starting directly with the most technical subjects. There are excellent lists addressing more general and strategic themes, which will enable businesses to hone their choices".*

intel Security

"The cloud's global security level is increasing"

Vincent Hamaimi
Sales Engineer - Intel Security

Vincent Hamaimi, sales engineer for Intel Security explains the recent developments in Cloud security technologies and strategies, underlining the extent to which OpenStack is a complementary force for assisting change.

For a long time, the security argument was the red flag raised in response to corporate Cloud projects… But what exactly is at stake when it comes to securing the Cloud?

It is a vast subject. There were a lot of reservations regarding the data hosting location, compliance issues, trust, but also concerns over encryption of data sent in the Cloud. However, there were also many points in favour of better security, with a strong argument: Cloud service providers are much more capable of doing better, for a lower cost, in security terms, if each company wishes to provide high security for its own datacenter, following a logic of mutualisation. In Intel Security's vision, this not only involved securing the infrastructure itself and the access to Cloud platforms, but also concerned offering the necessary visibility to businesses for them to be able to manage very different environments, or

in other words, helping them to make the link between security issues and their Cloud strategy, without the former restricting the latter. In concrete terms, it is as much a matter of IPS* technologies for suppliers as it is a question of securing flows on the web between users and the platform. A company using an office tool in SaaS mode has to deal concurrently with access authorisations, anti-malware analysis, authentication of various user rights, etc. Furthermore, businesses in public or private Clouds require visibility for all the instances deployed and the IS, because to protect these machines, you need to be able to identify them before securing them.

Beyond managing complexity, what are the changes in cyber-security approaches dedicated to the Cloud?

One of the obligations is to respect the appeal of the Cloud for businesses. This means proposing flexible prices, with payment per use, for the security element that is coherent with the offers proposed by Cloud operators. This was not the traditional method used by players in in the security sector, so it was necessary to adapt. In more concrete terms, it was also neces-

sary to optimise the tools for virtualized environments, as well as ensuring that the capacity to carry out scans on duplicated instances did not create redundancy or saturate the hypervisors. When a company implements Cloud instances, one of the particular complexities from a security viewpoint is adapting to the machines that will be used physically, since the traditional configuration for securing them cannot be continually reproduced in case of change.

The challenge is therefore to possess in security terms the same "layer of abstraction» that can be obtained with Open-Stack for example?

It is an important subject. We have developed Intel Security Controller*, a gateway between security solutions that can already be deployed in virtualized mode with a significant amount of automation,

in order to follow the Cloud dynamic. This involves orchestration with standard profiles: web servers, databases or applications, for example. With a single console, it is thus possible to apply the different security policies defined by the company accordingly. Effectively, this technology is available and is very advantageous for OpenStack.

Is there an advantage in Cloud security terms of going down to the hardware level?

There is a need for the OpenStack layers to benefit from the progress made in recent years in terms of security, in particular with regard to processors. In this case it is as much a question of protocol such as AESNI* for encryption as it is Software Guard Extensions (SGX)*, which make it possible to efficiently isolate processes.

However, the technology developed by Intel should more broadly speaking enable evolution as regards the vision of security, to make it smarter.

How?

Another issue faced by players in the security sector is that their former approaches were quite naturally thought out with a silo mentality... Nowadays, the trend is for more collaboration and information sharing. This is why we have developed the Data Exchange Layer (DXL)*, with a view to opening up to newer forms of knowledge than those in which we were historically specialised, by facilitating interactions with other players in the security sector, such as, for example, specialists in workspace security... We have worked on collaboration between the different technological bricks enabling consolidation of a more global vision and more relevant decision making. The idea is to gain swift access to the information required to justify (or not) blocking of a process, for example. Automation is a valuable argument in a current climate where all companies are confronted with a major problem concerning the availability of skills. The lack of expertise for tackling the complexity of the stakes is blatant. It is not necessarily the role of a company to have an engineer in-house who is specialised in sand-boxing and who can carry out

reverse engineering of the threats that are discovered.

What are the connections between this philosophy and the use of OpenStack in businesses?

We are resolutely implicated in an open approach of standardisation. It is the best way of facilitating real-time automated reactions to Cloud security issues and to improve businesses' remediation capacities. The advantages of OpenStack are fully complementary to this vision: this set of technologies offers the speed and flexibility which make the difference. It is a key factor: the company's challenge is indeed to reduce the window for action as much as possible in order to able to implement adaptable and in-depth defence. With the increasingly greater availability of such means, the Cloud's global security level is increasing, to the benefit of both large corporations and businesses that are more modest in size. ■

Intel Security

Intel Security combines the experience and expertise of McAfee with the tried and tested innovation and performance of Intel to make security an essential ingredient in all IT architecture and on each IT platform.

Glossary

IPS : Intrusion Prevention System, providing active prevention of intrusion that allows blocking of known or unknown attacks.

Intel Security Controller: an approach allowing security to be defined per software application, thanks to the addition of an abstraction layer between the security infrastructure and management of infrastructure virtualization, defined per software application (Software-Defined Infrastructure)

AES-NI: Advanced Encryption Standard New Instructions. A set of instructions that allow tangible acceleration of encryption, with a view to performance and application of encryption in zones that were previously inaccessible.

Software Guard Extensions: extension of the Intel architecture designed to increase the security of software via a sandboxing mechanism, involving isolation in an enclave of a company's legitimate software, to protect it against attacks from malicious software.

Data Exchange Layer: a standardised communication and integration layer that can be used by all products, enabling unification of heterogeneous technological solutions produced by different editors.

OpenStack, international *by design*

What do eBay, Axa, BMW and Airbus have in common? They are known firms and brands with strong development on the international scene. Most importantly, they are launching or are already working on Cloud projects that incorporate an open source dimension by the means of OpenStack.

In a world of data, in which the digital economy changes rapidly, the rules for businesses, the traditional activities – even often economic rents – are being rocked by players and technologies that are designed to be immediately flexible, connected and, most importantly, borderless. If the Accor group has been obliged to react over the last 18 months by reworking its digital strategy and recognising the necessity to swiftly carry out its digital transformation, it is not due to the pressure from one of its direct competitors. The new rules are fixed by firms such as Booking.com or AirBnB. These two companies are much younger and have used the power of digital services to position themselves rapidly in all countries, whilst occupying a high place in the accommodation chain in order to capture a maximum amount of value.

Tools to handle worldwide Uberisation

This "disintermediation", as the phenomenon is often referred to, is a winning strategy, which often places small flexible structures on an equal footing, or even at an advantage, with companies that are much bigger in size. *"Why are these players, like traditional taxi firms, caught out by Uberisation? It is because they have not enjoyed the capacity to invent these new services by themselves. Firstly, because they have not managed to foster these innovative ideas in-house, but also secondly*

because they did not have the tools to be able to translate them sufficiently quickly enough into concrete reality" points out Sebastian Braun, for Mirantis (see the Interview on p. 31).

The traditional proprietary IT environments are generally too outmoded to be able to gather the data of a complex and borderless world, in which speed, knowledge and customisation are at the heart of the matter. Beyond the culture of innovation in businesses, the question of the infrastructure that will make it possible to provide the services and avoid being pushed aside by a start-up on the other side of the world is of central impor-tance.

Alternative and exemplary

Naturally, the flexibility of the Cloud and the way it facilitates the international stakes for a business, be it in the case of subsidiaries to major groups or operations to conquer new markets conducted by SMBs, has been appealing for several years. The market shares of an international public Cloud such as the one proposed by Amazon are a good reminder. OpenStack appears as the alternative. "*We all know how successful Amazon have been with the Cloud: they have been using an equivalent of OpenStack on their projects for years. Indeed, OpenStack is a generalisation of these approaches, potentially for all businesses,*" explains David Allès, Senior Cloud Engineer with Orange, before adding: "*Each CIO must ask*

> ## "Each CIO must ask him or herself how they can provide users with the same level of exemplarity as Amazon or Google"
>
> **David Allès**
> Senior Cloud Engineer - Orange

him or herself how they can provide users with the same level of exemplarity as Amazon or Google. If they fail to do it, they put their company in danger". These questions are not new and consequently businesses are increasingly turning to OpenStack in order to have a tool that will provide them with solid foundations for leading a counter attack against competitors that are much smaller and more flexible. The American firm eBay is a pure player in the e-Commerce sector, but – as an historical player in its own way – this will not protect it against shortages and competition that is increasingly stronger on its market. This partly explains why it was one of the first to turn the corner. During the grand conference at the Cloud World Forum in London last year, Suneet Nandwani, the firm's Director of Cloud Engineering announced: "*Today, 95% of eBay market-place traffic is fuelled by our OpenStack Cloud. Three years ago, it was 0%*". This multi-region private cloud hosts the company's critical applications used by its customers, but also acts as a platform for the uses of its developers. "*Robust, flexible and scalable*", Nandwani praises this in-house infrastructure which is very like a public Cloud, thanks to Open-Stack, and is seen as a mature system. The clear objective of resorting to Open Source is, "*to avoid any form of captivity with regard to a supplier*".

The growing conviction of businesses

Do all businesses, even when they have an international strategy, recognise themselves in the case of a player like eBay? "*No, because such successes are often perceived as examples of the new world. In other words, they are the triumphs of early adopters who have not had to ask themselves the same questions, particularly with regard to managing existing IT systems,*" admits Sébastian Braun. However, in France and on the international scene, other examples serve to illustrate the growing conviction of businesses which have such a legacy to manage. The latest is Airbus, which announced at the Paris Open Source Summit in mid-November, that it would deploy its on OpenStack Cloud infrastructure in 2016: the first building blocks will be placed in the forthcoming weeks.

In mid-November also, the insurance firm Axa announced that it was developing a second private Cloud based on OpenStack, whereas the first drew from proprietary technologies. Axa Tech, the insurance firm's subsidiary devoted to IT production – in which 4,000 staff are at the service of the group's 160,000 employees around the world – has been confronted for several years with the innovation challenges inherent to a group deployed in many countries and where a certain number of local entities have limited headcounts. The desire to develop new services in-house encouraged them to look into both the Cloud and Open Source. What's more, speed is of the essence and flexibility is the watchword. On this subject, Axa did not want to close off any avenues and instead opted to maintain the possibility of integrating other suppliers into its systems alongside the major public Clouds such as Amazon. Hence the desire to look into the case of OpenStack in the forthcoming months. This vision is coherent with that of the group's Digital Manager, Yves Caseau, for whom Open Source is a "gem" and a "must-do", as he admitted in the columns of ZDNet.

Outside French borders, firms of international scale are confronted with the same issues. Among the many illustrations unveiled during the 2014 Paris Open Source

Summit, BMW for example announced the entry into production of their private Cloud on OpenStack. The challenge for the car manufacturer was to make the difference in terms of flexibility and growth capacity of the group's IT infrastructure, whilst basing its efforts on a standard. After experiments will come the ramping-up: by 2017, the German car manufacturer intends to run the majority of its systems using OpenStack, according to the British web site computerworlduk.com.

> ## "Do all businesses recognise themselves in the experience of eBay?"
>
> **David Allès**
> Senior Cloud Engineer - Orange

The strength of an international community

"The Cloud Standard" is the sledgehammer argument that explains the success of OpenStack as soon as the question is raised about the international strategies of the firms, who wish to continue accelerating along the road of cost efficient methods after having already broadly rationalised their infrastructures during the last decade. *"OpenStack has quietly taken its place as the Linux of the Cloud; we cannot really see ourselves switching to equivalent commercial solutions,"* notes Morgan Richomme, NFV Engineer with Orange. Moreover, OpenStack is, in a way, international by design: a fruit of the maturity of Open Source, this technology draws from worldwide communities of contributors, both private individuals and organisations, as well as the sharing of extremely rich experiences, which go far beyond the feedback proprietary offerors hope to obtain from their customers. Whilst innovation and new uses overcome barriers, sometimes brutally, sectors such as the automobile industry or banking/insurance have swiftly understood that their tools could not be eternally limited to a one-way and closed vision. Whilst their organisations managed to transform so as to incorporate new forms of business models, the production of innovative ad hoc services will only be able to be industrialised with compatible infrastructures. The desire of many international companies to avoid finding themselves captive to a Cloud supplier is especially logical in this respect: undergoing transformation in such a way also entails the firms' will to innovate by themselves. ■

"The right reason for switching to OpenStack is the desire to be more competitive"

Sébastian Braun
Sales Engineer - Mirantis

On the Cloud market, Mirantis stands out thanks to its 100% OpenStack positioning. The specialist provides customised services, reference standard training and certification for engineers, but also proposes turn-key support to help businesses optimally manage their switchover to OpenStack. Sébastian Braun, a sales engineer for Mirantis in France takes another look at the desire of businesses to choose open source Cloud approaches throughout the world.

Based on your experience, do businesses address the matter of OpenStack in the right way?

The subject is still in its youth, so it is not obvious for companies at first glance. Indeed, the main risk for them lies in embarking on the OpenStack adventure without being properly prepared, without access to the expertise that will allow them to get the best out of OpenStack. Its ecosystem is very developed and rich, whilst the extent of its possibilities is impressive. Consequently, it is easy for companies to feel lost. However, its technological maturity cannot be criticised because the core of OpenStack is mature; it is chiefly the management of the additional components that firms should reflect on. Companies often have lofty prospective ambitions that lead them to try to deal with everything at once. As it is, this approach is, on the contrary, exactly what should be avoided…

In what way?

There is a certain complexity inherent to OpenStack. The Anglo-Saxons speak of "moving parts" to describe all the bricks that are not necessarily necessary, but which contribute to the wealth of the technology as a whole. However, from a business point of view, for a company it must be beyond doubt that cross-overs and accumulations of these different elements will be perfectly stable and compliant. Consequently, Mirantis continually carries out a large amount of cross-matching tests on almost 200 servers to survey the development in the compatibility and stability of different sets. This vigilance is the flipside of flexibility.

As a recently established American company in France, you have been working for several years on the European market.

Have you noticed differences in maturity among companies in the growing use of OpenStack?

Beyond the well-known example of Silicon Valley, the development of the market is very quick in countries or regions with high expectations in terms of innovation: in the Scandinavian countries and the United Kingdom, but also in Middle Eastern countries. In Israel where there is a very rich ecosystem of start-ups, there is a genuine swarm of technologies and a crucial need for innovation; the entire country is on a permanent quest for new tools in order to attain improvement. In France, many firms have not yet signed up to this sort of dynamic. The same is true for many countries in Southern Europe and in the south-

ern hemisphere. For these companies, often a first step on the road to conviction is required regarding the necessity of innovation itself, the fact that it is necessary to reassess and to think about their digital transformation to cope with the metamorphosis experienced in their trade. French IT managers are often more resistant to change because they have the strength of possessing excellent proficiency with their existing systems, so they are naturally more efficient in the short term. On the other hand, in a more global context, this advantage will soon disappear. Anticipation is necessary. Once they have reached this state of mind, thinking about the use of OpenStack to strengthen their Cloud strategy becomes much more natural.

How is it possible to support businesses along this path?

As a *pure player*, we rely first and foremost on many partnerships to enable business to cope with such structural changes that can range across an entire company, without for all that making a clean break from their previous tech nologies and uses. Indeed, the ability to reassess does not mean starting everything again from scratch. The stability of the business needs to be ensured, investments need to be made durable and existing resources need to be exploited. Companies must be able to continue to accept choices of the past without delaying their OpenStack projects. As such, they need to look beyond the purely technical aspect to ask the question "how". How will we exactly benefit from OpenStack? If the sole answer found involves replacing VMware to do exactly the same thing, then it is a bit of a weak reason.

What should be the right reasons?

All those which encourage greater competitiveness from the company! The justification of the change should be a new vision of innovation and a better time to market… The threat today is this famous Uberisation, or at least being brutally rattled by new players on the scene without having the capacity to personally invent and implement the type of new services that they propose. Once this state of mind has been reached, the right tools must be sought to be ready to fight this fight. It should be remembered that these new players have succeeded in the disintermed iation of their competitors precisely because they have IT tools and approaches that are completely different from those that can be found in traditional companies.

> **"These new players have succeeded in the disintermediation of their competitors precisely because they have IT tools and approaches that are completely different form traditional companies"**
>
> **Sébastian Braun**
> Sales Engineer - Mirantis

Including Open-Stack for the Cloud?

OpenStack should make it possible to reduce the overly long lead-times that businesses have to endure for their projects: when already several weeks are needed for an CIO to provide a working environment required to launch a project, then there is a major problem. The response of various sectors is common knowledge: they end up using major public Clouds such as those proposed by Amazon or Google and at the same time lose the know-how, IT skills and in-house iterations required for healthy long-term innovative approaches, without taking into account the issues of SLAs or also confidentiality. They have to be able to say: let's innovate by ourselves!

Do you therefore recommend a strategy of private Cloud and Open Source?

The first step is indeed an in-house Cloud that will make innovation possible throughout the company, rather than creating dependency and captivity with regard to the Public Cloud. However, you have to know what to do with it and to whom you give access. All too often, businesses approach the subject through virtualization using traditional applications. In other words, using applications that enjoy the least benefits from this method. The genuine value that they need to attain lies, on the contrary, in Cloud native applications. It is very advantageous for major players to follow this sort of approach because their critical mass of IT usage enables them to swiftly achieve a return on investment. That said, companies that are much smaller in size but which extensively use IT resources or the web can significantly distinguish themselves in this field. Pure players such as eBay have grasped this notion.

Mirantis

Mirantis is the first OpenStack specialised company. It provides all the software and services as well as training and support required for running OpenStack. Many of its customers have already entrusted Mirantis with customised deployment of OpenStack in production mode. Among the five leading companies in the world that enhance OpenStack with Open Source software, Mirantis has also participated in the creation and the deployment of major OpenStack Clouds for companies such as: AT&T, Cisco WebEx, Comcast, Dell, The Gap, la NASA, NTT Docomo, PayPal, Red Hat, Sprint and Verizon.

How can a firm obtain the right skills, in sufficient number, in-house so as to succeed?

One of the ongoing concerns of French companies is indeed to work towards the perfect control of their tools, since it is seen as a determining factor. I do not think that this is the right method with Open-Stack. Companies who wish to totally control all the ins and outs of OpenStack, conduct maintenance and carry out upgrades, run the risk of failure due to a lack of resources, or at best they may become experts in the matter, but at the expense of all the rest, i.e. precisely the things that will allow them to obtain business value from such technology! The Anglo-Saxons are perfectly aware of this. They are ready to rely on service providers to handle the richness of OpenStack and instead focus the efforts of their teams on identifying the applications that will most benefit more quickly from the change. Similarly, the creation of mixed Cloud teams devoted to the subject helps to unite all those involved. What is important is to bear in mind that the technology, as fine as it may be, is not an end in itself for the company: it must be a facilitator and the teams must be able to focus on the upper layer of value that they can provide to their customers, rather than wasting time becoming the leading experts in OpenStack. ■

Powered by **intel** Cloud Technology

"For Intel, Openstack is a means of highlighting the very latest technology"

Marco Righini
OpenStack Solutions Architect, EMEA - Intel

Chief engineer for the deployment of OpenStack solutions for Intel's customers, Marco Righini explains the place of OpenStack in the group's strategy and the strengths of this technology for businesses.

How would you summarise 2015 for Open-Stack?

In 2013 and 2014, the users who tested OpenStack were mainly geeks! In 2015, businesses started to show more serious interest in it as the technology has become more mature. Admittedly, we are still in a period of discovery, but many users now are perfectly proficient with this technology. In any case, it was the first year in which even customers who are not developers started to evaluate OpenStack. In 2015, customers of all sizes tested these solutions and "played" with them It is the first stage for individuals to get accus-

tomed to OpenStack before it is deployed even more massively in the future. OpenStack will soon become a standard for the Cloud in Open Source.

Why?

There are several reasons! For users, OpenStack is a scalable Cloud that enables scaling and reduction of storage costs. For retailers of Cloud solutions, it is a very open platform because it allows value to be added and a variety of technologies to be connected. Its openness and scalability are two of the most appreciated features among OpenStack customers.

What is Intel's strategy on this matter?

In general, Intel is very interested by Open Source because we can directly contribute to projects and demonstrate our know-how. As regards OpenStack more specifically, we are among the leading contributors, the number of which is enormous. It is inevitably very interesting. In strategy terms, this position is a key facilitator for Intel and an engine of growth. We invest to ensure that OpenStack can be deployed in any business at all. In the end, it is a win-win-situation: users obtain more concrete advantages for their Cloud, whilst we provide differentiation and innovation

Intel

Founded in 1968, Intel Corporation is the world's leading manufacturer of semi-conductors. Intel is a major player in the world of IT innovation. The company designs and manufactures essential technology used as foundations for all technological appliances throughout the world.

based on our technology and our contributions. It is also a good means of highlighting the very latest technology because it is obviously easier to modify Open Source code rather than having to wait until the licence of a third party product is ready to benefit from such progress.

To what extent does OpenStack transform businesses?

Everything depends on the company. Firms that possess the right skills can use Open-Stack as a new technology to the benefit of their IT strategy. Today, companies, and especially information systems directors, have to tackle new challenges due to the arrival of the GAFA trio (Google, Amazon and Facebook). They have shaken up many sectors by slashing prices and proposing very short times to market for their new offers. Within businesses, the CIOs must follow this pace and therefore have to respond more quickly to in-house and external customers. OpenStack gives them this opportunity by allowing them to set up a private or hybrid Cloud and to orchestrate quicker market introductions at prices that are lower than those of their competitors. Irrespective of what is decided from an IT technology viewpoint, a constant remains: the time to market absolutely needs to be reduced. OpenStack is an efficient means of achieving this, which has a chain reaction of consequences for the company.

What is the specific impact of OpenStack on CIOs?

They face a considerable challenge. I believe that the biggest problem CIOs have to cope with is the acquisition of the extra knowledge that will allow them to make the most of the Cloud strategy. As such, natively developing an application for the Cloud is very different from what happened before hand, because the skills and state of mind should not be the same. Beyond the technology, the vision of what the company wants to do and how to do it should change the CIOs.

What is the biggest obstacle to overcome for a company that wants to make its debut with OpenStack?

I would say that the positive side of Open-Stack is Open Source, but you will sometimes hear that its negative side is… Open Source. When you pay for a licence, you mainly pay an editor for a specific product with a single point of contact, whereas with Open Source, it is an entire community that develops it. This fundamentally changes the relation to the solutions used. However, is this an advantage or a weakness for a business? It all depends on its organisation, infrastructure and teams. Most companies who genuinely use Open-Stack well already possess plenty of available skills in-house, such as experts in Open Source. The universities, scientific centres, telecoms operators and Google are all good examples.

It all depends on the experience of users and how much they invest. Those with the right Open Source knowledge evidently enjoy more advantages than inconveniences in using OpenStack. Professionals must be ready to assume such a position.

Is this why OpenStack is still perceived as an obstacle by certain companies, despite its advantages?

It is simply a question of maturity. On the one hand, the necessary skills are available, but on the other hand, the technology is insufficiently packaged to be easily established in a traditional company. Or rather, such a type of company does not possess the maturity to efficiently grasp the matter in hand. For example, to gain maximum benefit from OpenStack, knowledge of managing complex updates is necessary. Every six months, a new version is released: how many customers are ready to follow such a pace? Do they possess the culture and skills to do so? Awareness therefore needs to be raised by the offerors. This is also why Intel wants to ensure that businesses have a better understanding of these stakes, in order to deploy OpenStack more efficiently. Finally to facilitate familiarising with OpenStack, it is necessary to mention the Open Source editors who have positioned themselves with OpenStack. A good example is Red Hat, with whom Intel has enjoyed a long and fruitful collaboration, which makes it possible to solve the issue of identifying a point of contact within the OpenStack community, by providing technical support and regular stabilisation of the many updates.

The issue of skills is still of central importance: can Open Source make the difference to attract new talents?

It is surely one of the reasons that make a company attractive! Genuine thinking needs to be conducted on the acquisition and the place of these new talents in companies. For the Cloud, the subject is greater than that of OpenStack: even entirely automated proprietary Clouds of VMware type require different skills and states of mind to genuinely benefit from them. I believe that this is true of any new infrastructure. Naturally, there are differences between Open Source and proprietary approaches, but not in terms of the amount of skills and these two worlds can be perfectly complementary to one another. In the end, why is Open Source a determining factor? The challenge is to adapt to the state of mind that has radically changed in our technological spheres over the last few years. Businesses need to take this into consideration. ◾

"Irrespective of what is decided from an IT technology viewpoint, a constant remains: the time to market absolutely needs to be reduced"

Marco Righini
OpenStack Solutions Architect, EMEA - Intel

"For businesses, it is the quality of support that will make the difference"

Philippe Laplane
Chairman of the subsidiary OCfB SAS

Cloud computing has often been seen as a subject dominated by Americans on the international stage. However, at a time when the issues of trust, sovereignty and competitiveness are finding an echo among businesses, France can also boast national champions. Philippe Laplane, Chairman of the subsidiary OCfB SAS, explains how the French group perceives the subject and the criteria that differentiate its strategy.

What is Orange's position in the world of the Cloud?

For a group like Orange, the Cloud industrial revolution was an opportunity not to be missed. It means using this technology for our own infrastructure, but also being able to propose them as part of services that we provide to professionals and the general public. Over a several year period, the entire group has been oriented to taking the maximum advantage of the Cloud. This technology relegates the importance of infrastructure and promotes that of services, to provide offers that can be much more flexibly adapted to customers. Orange Business Services, our subsidiary devoted to businesses, therefore undertook this approach for its own departments. As a result, two years ago, it created Orange Cloud for Business, which I manage, in order to assemble the activities and skills which enable it to carry its vision into the world of the Cloud, whether public, private or hybrid.

What are your ambitions for 2016?

We are working on two vectors. Firstly, the development of our public and private Cloud platforms, including enhancement of the services provided to support transformation of businesses and their progression towards the use of such platforms; secondly, and more in depth, we are proposing a constantly increasing amount of services that reinforce the value of the Cloud platform, in terms of Operating Systems, applications and databases. The support provided makes it possible to provide specific responses to the expectations of companies that are giving voice to their Cloud strategy.

What is the place of technology such as OpenStack within these ambitions?

Historically, we have always been significant users of VMware, both for in-house use and for offers intended for our customers.

Consequently, we have been able to benefit from the maturity of these virtualization technologies, but this also entailed the inconvenience of being strongly linked to a specific offeror, which is an obstacle when you wish to be a general player, able to respond to a wide range of needs. In 2012, on the launch of Cloudwatt, we naturally made our influence felt so that the technological choices made leaned towards Open Source and in particular OpenStack. At the time, the subject was in its infancy, but many players in the IT world, both large and small, imitated us, so our gamble paid off.

Moreover, one of the missions of Orange Cloud for Business was to support the entire group in its transfer to the Cloud. In this respect, we had to study and highlight all the synergies that it was possible to obtain. With the acquisition of Cloudwatt in 2015, we entered a phase of very significant convergence in order to consolidate this orientation and the complementarity of our approaches.

Today, do businesses trust the Cloud?

Trust remains a major and multi-faceted issue. It involves technological choices (OpenStack carries weight thanks to the greater independence it offers, but it is not the be all and end all of the mater), data location (with the concern of transparency and respect of the choices made by customers), Cloud operator identification and the location of their personnel, as well as the clarity of contractual matters, in particular with regard to subjects like the responsibilities of the Cloud operator, reversibility, etc. Trust is not a right, it has to be earned by a demonstration of what we know how to do. Naturally the Orange brand itself is an assurance of reliability, but we also want to provide reassurance through proposing

● ● ●

"To ensure the security and performance of a heterogeneous IS [...] the CIO is the key person in the company"

Philippe Laplane
Chairman of the subsidiary OCfB SAS

a very high quality customer experience to businesses. Beyond the technological choices that we have made and which include OpenStack, we did not simply want to sell virtual machines in bulk in one click, as is the case of many players in the sector. For companies that are in the process of developing or refining their Cloud strategy, it is often the quality of support available that makes the difference.

How do you improve the Cloud customer experience?

Firstly by proposing support to businesses in their strategic thinking on their approach to the Cloud. This technology is at the crest of the wave, but a company has to think about what it wants to do with it, rather than merely joining in with the latest fad. The question "why is the Cloud actually being integrated into my information system?" needs to be asked. Thereafter, we provide support with the implementation of choices within a company, including within the scope of complex hybrid approaches for key account customers. Finally, it is possible to promote and optimise the options and services chosen throughout operation in order to remain able to adapt and to stay relevant in relation to the ongoing changes affecting our businesses.

Faced with the diversity of offers and opportunities on the Cloud market, a company can soon end up feeling lost...

This is exactly why the role of the information system director must today be of central importance. It is part and parcel of his or her own transformation in parallel with that of the company: the CIO must be able to orchestrate the discussion with all the company's departments, whether they are marketing, industrial, administrative, etc., in order to identify their specific needs. Next, he or she must study the existing system and the nature of Cloud offers on the market, with the following question permanently in mind: what is the direction for my IS? We all are aware of examples of firms that have set up a private Cloud

without knowing exactly what to do with it. It is a complex period for an CIO, who must find the right balance through an increasingly bi-modal approach, i.e. capable of maintaining the daily activity of his or her company whilst taking stock, being flexible and proactive to enable the emergence of innovations within the different departments. To ensure the security and performance of a heterogeneous IS, made up of applications in SaaS mode, in private or public Cloud mode, the CIO is the key person in the company.

What questions are your customers currently asking about the Cloud in order to best prepare for 2016?

We have observed some major triggers that are significant determining factors in the transformation of our customers and the underlying issues of their Cloud strategy. This involves the transformation of their employees' workstations towards a multi-format and multi-device environment, with considerable place given over to mobility. Analysis of Big Data is also at the heart of their concerns: companies have become aware over the last several years of the wealth of data that they possess; but how can they have easy access to

Orange Business Services

Orange Cloud for Business is a subsidiary of Orange Business Services devoted to Cloud computing infrastructures (IaaS) for businesses. Created in July 2014, it unites all the Orange Business Service entities devoted to Cloud infrastructure: the public Cloud, private Clouds, hybrid Clouds and activities linked to workstations and their virtualization.

the computational power that will enable them to make the most of such data?

For example, we have implemented dedicated offers using OpenStack and Hadoop as a basis to meet these new requirements. The other point of interest that accelerates the firms' desire for transformation with the help of the Cloud is digitisation of customer paths.

To make progress on these matters, businesses want more flexibility: they need to quickly test applications enabling them to meet the expectations of their customers, rather than committing to putting in place monolithic infrastructures which run the risk of placing them at an impasse… The Cloud makes it possible to avoid this obstacle, taking only several minutes, in a case where several months were previously necessary for CIOs to carry out the slightest test. For example: at a time when more and more software editors are following the same development logic (foregoing infrastructure management so as to focus on the quality of their software) it is worth reminding ourselves that in France and abroad, not one single disruptive start-up has been founded without following a Cloud approach. Several years ago, these players used very low cost offers such as those provided by Amazon in the public Cloud. Today, faced with the uptake in their activity and the increasingly more important questions regarding data confidentiality, they are seeking alternatives, among which solutions based on OpenStack, in both the public and private Clouds, hold pride of place. ∎

Make your business more agile

OpenStack Public Cloud

Get access to a variety of resources on a pay per use model

Because you benefit from the cloud's full flexibility without subscription, choose the Cloudwatt solution based on Openstack technology.
As well as software independence and guaranteed ownership and protection of your data, your sites and applications will equally benefit from a powerful, highly receptive and secure platform.
This solution allows you to improve the efficiency and agility of your business.
It will help to reduce the total cost of ownership (TCO) of your infrastructures and associated services, whilst helping you organize your teams using the "DevOps" structure.

Bringing the essential closer

Orange - SA au capital de 10 595 541 532 € - 78 rue Olivier de Serres 75015 Paris - RCS Paris 380 129 866

orange™

Business Services

Cloud.orange-business.com

The "Experience notebooks" collection proposes a series of case studies dealing with issues faced by all activity sectors within the scope of their digital transformation. It is based on the capitalisation of the major market players' experiences, without bias, to provide a new vision on the subject addressed. Since a pragmatic approach is better than a long speech, this feedback from decision-makers facilitates understanding of the main themes that affect the day-to-day running of businesses.

This Experience notebook was written by the journalists Dorian Marcellin and Charlie Perreau for *Alliancy, le mag*, in partnership with Intel and Orange Business Services.

Alliancy, le mag
Or the economy in the digital era!

A bi-monthly economic and business press publication, *Alliancy, le mag* deciphers transformations in progress in businesses and society in the fully digitised world.

Alliancy, le mag deliberately avoids dealing with subjects hot off the press. It is a magazine that takes stock, via in-depth articles. Over approximately one hundred pages, it looks at the underlying trends that affect firms' activities, life in cities, structuring of sectors, or indeed entire portions of the economy. Through practical cases of use, the writers bring the players who design these new technologies and who provide support for these developments face to face with the people who use them every day.

With 14,000 copies published available on subscription, *Alliancy, le mag* is intended for the top decision-makers in businesses and public and private institutions who believe in innovation, co-development and the digital world in order to drive the transformation of their organisation and accelerate their development.

Legal notices and exploitation rights
Alliancy, le mag

32 rue des Jeuneurs 75002 Paris, France

French limited liability company with capital of 10.000€

792 635 138 R.C.S. Paris

http://www.alliancy.fr

Director of publication: Sylvain Fievet

Any reproduction of the texts published in the Experience notebooks is forbidden without the explicit authorisation of the editor.

For any information, please send your questions to the following address: redaction@alliancy.fr

YOUR DATA
IS YOUR BUSINESS
PUT IT ON A SERVER

POWERFUL.
RELIABLE.
AFFORDABLE.

No matter the size of your business, the value of your data is enormous. Keep it accessible and better protected with a server powered by the Intel® Xeon® processor. It's a better way to work.

Already published in the Experience notebook collection

N°22 - **Financial performance experiences**
"Cash, fast-closing, predictive economics: the new forms of steering that are building the future"

No. 21 - **Steering and performance experiences**
"The resources for productive cohesion between CIOs and core business concerns"

No. 20 - **Training experiences**
"Big Data professions: companies on the lookout for the rare bird"

No. 19 - **B2B Marketing innovation experiences**
"What sets your customers' pulses racing?"

No. 18 - **Change management experiences**
"From digitisation to the adoption of technologies:
when businesses gamble on users to succeed in their transformation"

No. 17 - **Travel Management experiences**
"When travel policy and employee freedom clash:
the new paths for business travel"

No. 16 - **Local authority experiences**
"How to encourage social links and good citizenship"

No. 15 - **Software Transformation experiences**
"Innovation: can editors still keep up with the pace?"

No. 14 - **SMB experiences**
"Businesses that grow with the digital age"

No. 13 - **Hosting experiences**
"Virtualization, automation, services:
is there a better solution than the Cloud?"

No. 12 - **HR Planning experiences**
"Corporate profitability, employee fulfilment, quality of service:
can a virtuous balance be achieved day-to-day?"

A more flexible, higher performance and more secure cloud: the **OpenStack** opportunity

OpenStack celebrated its 5th birthday last July and Open Source has never been as popular in Cloud computing. Structural initiatives are increasing and the maturity of OpenStack technology and its community provides an opportunity to strengthen Cloud strategies.
2016 will witness media exposure of large scale deployments.

Technological independence, sovereignty, performance, flexibility, security... the advantages of OpenStack for organisations are evident in the approaches of both the private and public Cloud. However, can businesses and public institutions go beyond the buzz and gain a firm grasp of the subject? In this experience notebook, Intel and Orange Cloud for Business aim to review the main keys of OpenStack and to start a debate on a subject that was until very recently the domain of technical experts.

Business Services **orange**™

A⁄⁄iancy **le mag**
NUMERIQUE & BUSINESS

in partnership with

Powered by **intel** Cloud Technology