

IBM SolutionsConnect 2013

L'IBM TechSoftware nouvelle génération

28, 29 et 30 août
IBM Client Center Paris



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Transformez vos opportunités en succès



TIV05: Openstack : pourquoi partir avec IBM

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Pourquoi OpenStack?

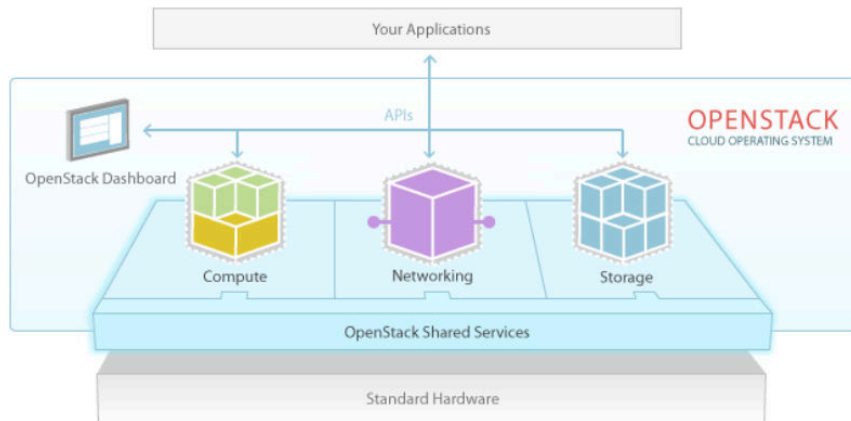
Quelques rappels



Openstack: construire le “linux du Cloud”



OpenStack is a global collaboration of developers & cloud computing technologists working to produce an ubiquitous Infrastructure as a Service (**IaaS**) open source cloud computing platform for public & private clouds.



Code available under Apache 2.0 license.

Design tenets – scale & elasticity, share nothing & distribute everything



Compute (core)

Provision and manage large networks of virtual machines



Storage (core)

Provision and manage block-based and object storage



Network (core)

Provision and manage network connectivity



Dashboard (core)

Enables administrators and users to access & provision cloud-based resources through a self-service portal.



Heat (core)

orchestrates multiple composite cloud applications using templates



Ceilometer (shared service)

Collect monitoring, metering, and other measurements



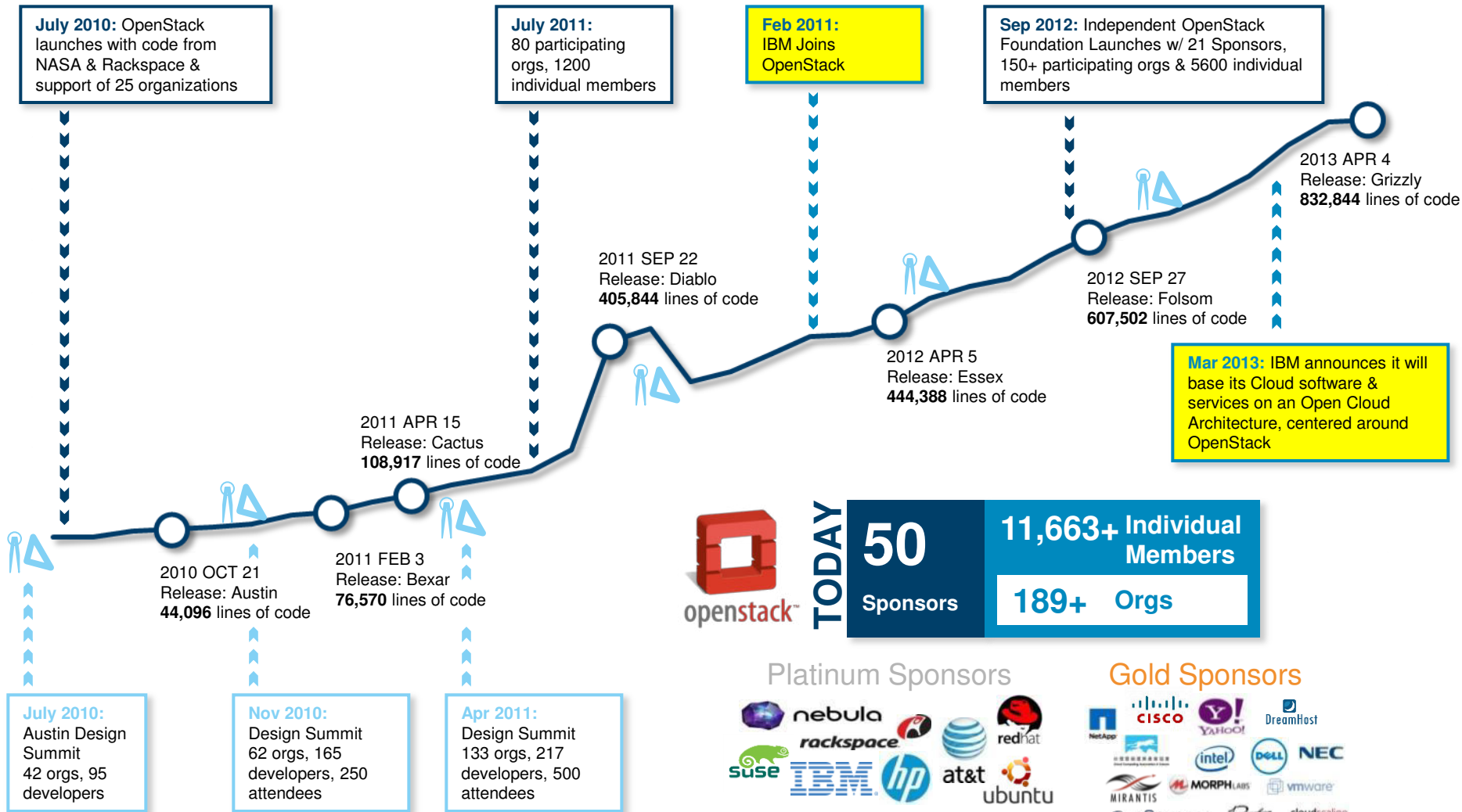
Identity (shared service)

Unified authentication across all OpenStack projects and integrates with existing authentication systems.



...

Une très bonne dynamique



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Qui déploie OpenStack?

Les cas clients officiels - <http://www.openstack.org/user-stories/>

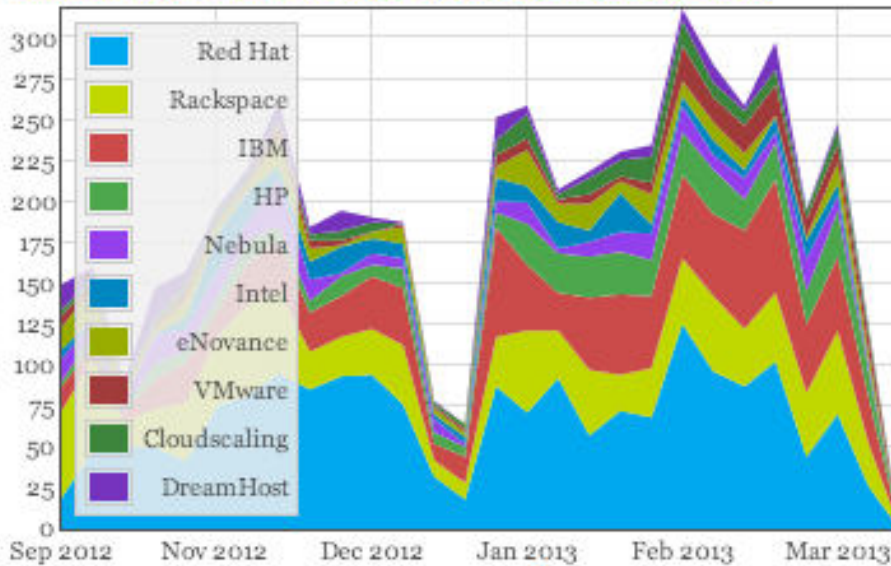


En France, Openstack a gagné beaucoup de mindshare chez les fournisseurs de service (Clouds souverains,...) et les entreprises.

Pour faire simple: IBM = le troisième contributeur d'OpenStack

SUMMARY OF ACTIVITY

Overall View of the Changes to the Source Code (Git)



Commits per company (weekly) ⓘ

9

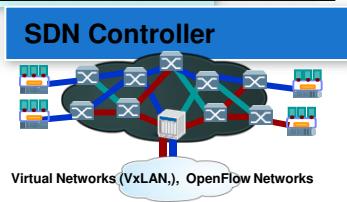
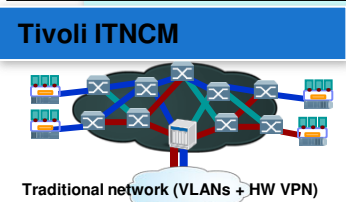
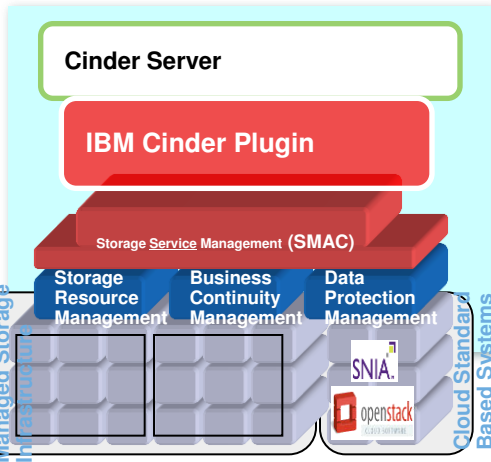
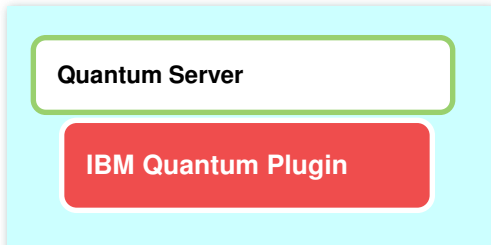
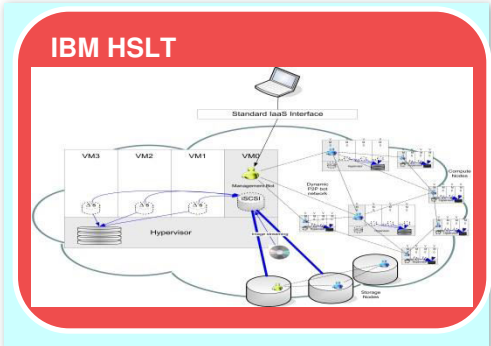
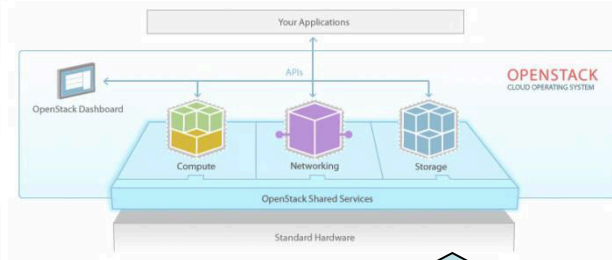
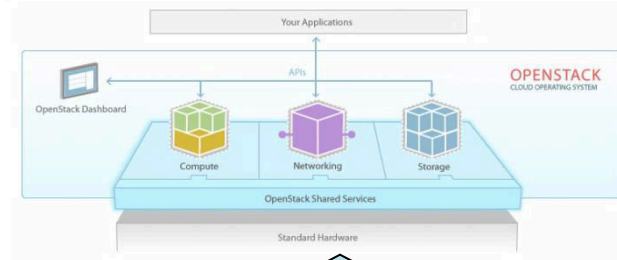
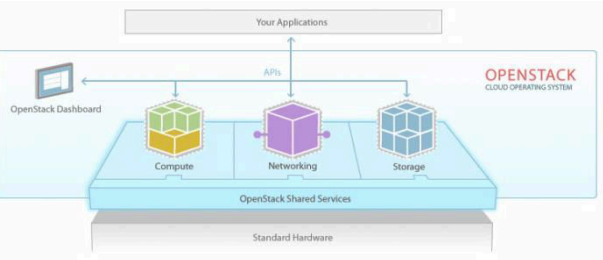
IBM has 9 core contributors

Différents types de contributions

Compute (Nova)

Network (Quantum)

Storage (Cinder, SWIFT)

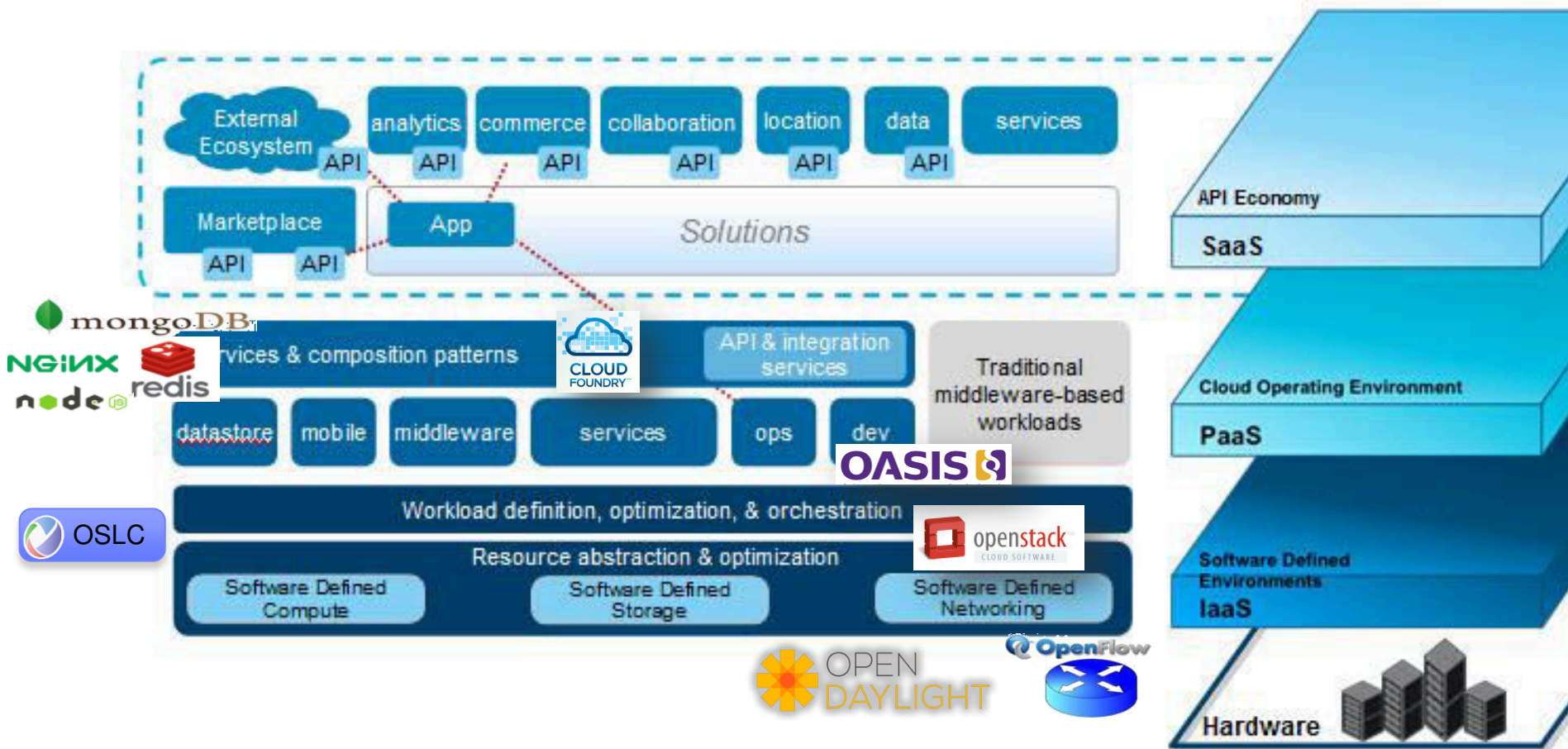


- HSLT convergence (ZooKeeper)
- PowerVM and Z/VM support enablement
- CIMI Implementation on Nova
- Customizable Workload Optimization using Platform Enterprise Grid Orchestrator (EGO)

- IBM SDN Quantum Plugin
- Quantum support for legacy network infrastructure via Integration with IBM Network Configuration management Tool

- IBM SVC, V7000, XIV Cinder support
- IBM GPFS Cinder support
- CDMI Implementation on Swift
- Rich Metadata and Query Support in Swift

L'émergence d'une architecture "Open Cloud"



Comment IBM met Openstack en oeuvre

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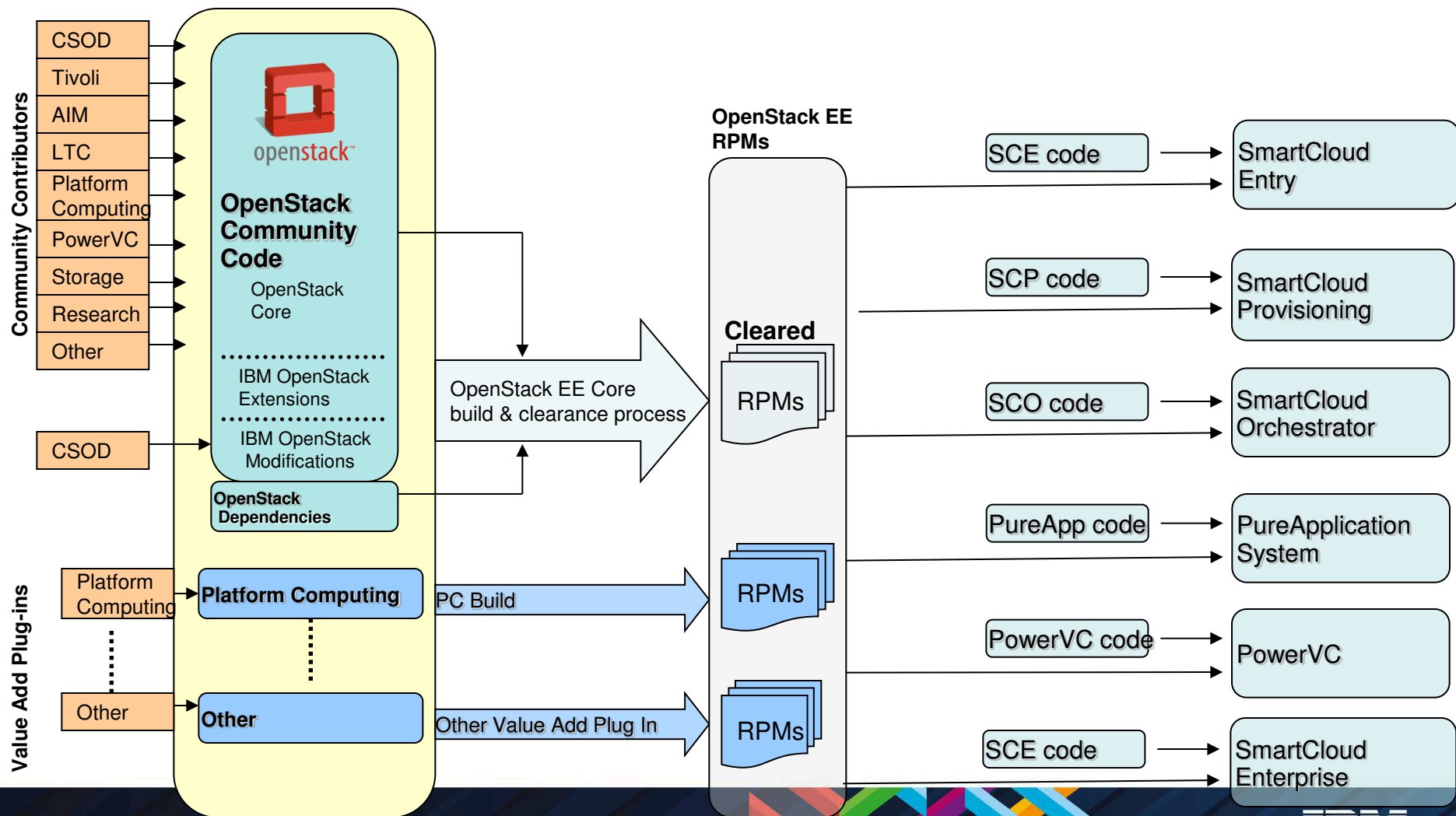
Faire comme pour le server Apache...

"We want this to be like the Apache HTTP Server was for WebSphere. Every modern day application server has Apache HTTP code in it. So that's what we want [OpenStack] to be for cloud."

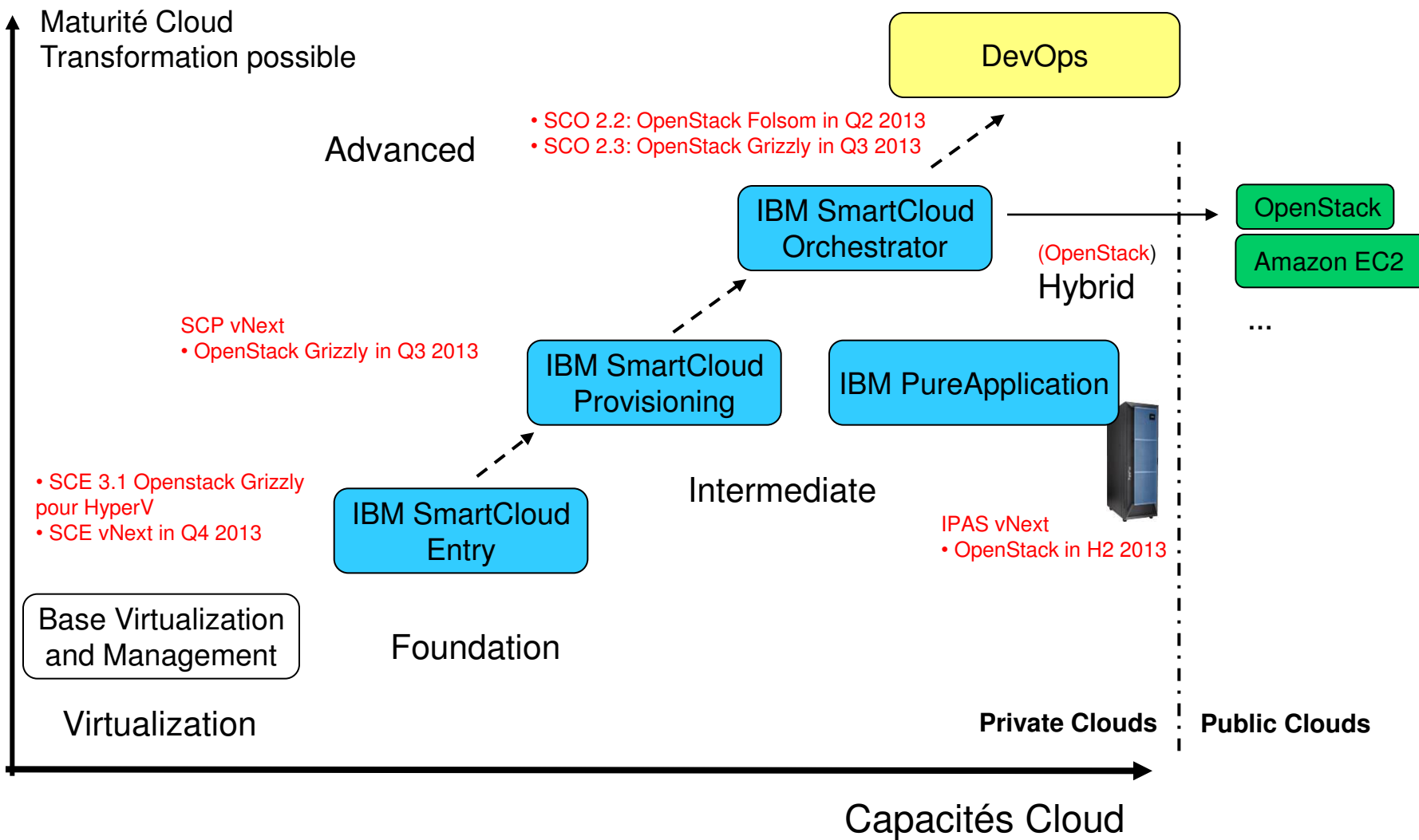
Angel Diaz, IBM's vice president of software standards, open source and cloud labs
<http://www.fierceenterprisecommunications.com/story/ibm-shakes-private-cloud-world/2013-03-11>

Une distribution Openstack commune à tout IBM...

...qui n'est pas vendue telle quelle!



... à la base des offres SmartCloud qui sont en train de passer rapidement sur Openstack



Pourquoi partir avec IBM sur Openstack

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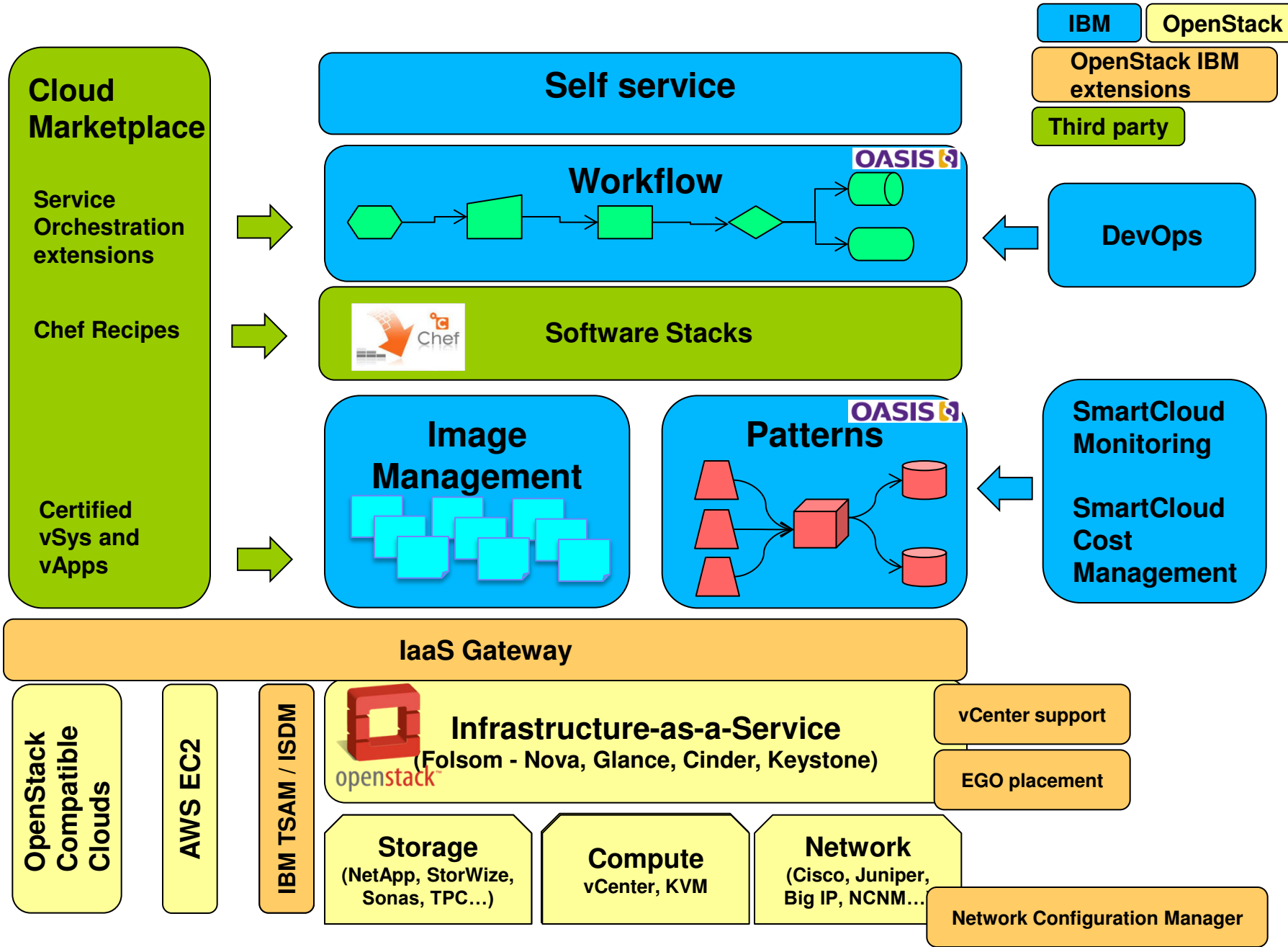
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Pour les problèmes traditionnels liés à l'open source

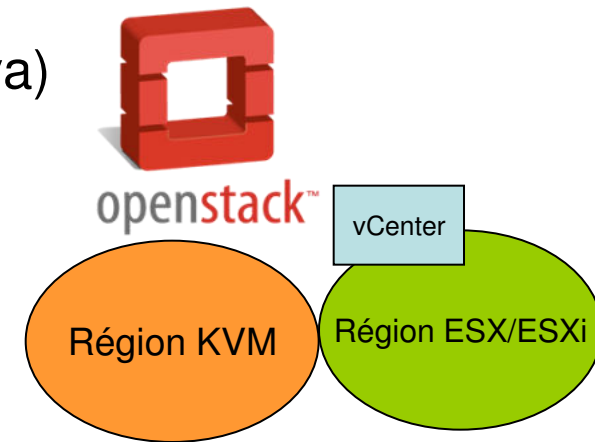
- Cycle de vie des versions
 - Support logiciel IBM standard : 5 ans + 2 optionnels
- Support technique (bugs)
 - Support logiciel IBM standard
- Maturité du code
 - IBM n'intègre que les projets qu'IBM considère comme mûrs
 - IBM complète au besoin (driver VMware, etc...)
- Compétences techniques et savoir-faire Cloud
 - Script d'installation fourni
 - Experts Cloud IBM GTS

Pour les extensions OpenStack d'IBM











Extensions – drivers

- Driver VMWare vCenter mûr pour Compute (Nova)
 - Openstack CE: prévu au plus tôt dans Havana
 - Introduire Openstack dans les clouds privés
 - Introduire KVM comme alternative à VMware
- Gestion des réseaux traditionnels par [Quantum | Neutron] (Network)
 - Intégration de Quantum avec IBM Network Configuration Manager
 - Permet de gérer l'existant réseau avec une couche d'abstraction SDN (Software Defined Network)
- Driver GPFS pour le stockage



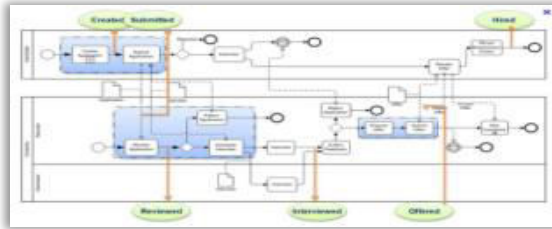
Extensions - optimisations

- Fédération Openstack (« IaaS gateway »)
 - Fédérer différents nuages parlant Openstack (API)
 - Permet de parler Openstack à EC2
- Politiques de gestion des VMs (EGO – Entreprise Grid Orchestrator, issue du monde HPC)
 - Placement initial
 - HA (High Availability)
 - DRS (Distributed Resource Scheduling)

Packing	<ul style="list-style-type: none">• Pack workload on fewest number of physical servers• Maximizes usable capacity, reduces fragmentations, reduce energy consumption	
Striping	<ul style="list-style-type: none">• Spread workload across as many physical servers as possible• Reduce impact of host failures, higher application performance	
Load-Aware	<ul style="list-style-type: none">• Allocate physical servers with lowest load to new workloads• Higher application performance	
HA-Aware	<ul style="list-style-type: none">• Allocate HA-enabled resources to critical workloads• Match availability levels to service requirements and costs	
Energy-Aware	<ul style="list-style-type: none">• Place workload according to energy indices and datacenter hot spots• Reduce energy consumption	
Affinity-Aware	<ul style="list-style-type: none">• Place workload close to critical resources such as storage• Higher application performance	
Server Model-Aware	<ul style="list-style-type: none">• Allocate resource to workload according to model types• Maximize utilization of higher performing & more expensive resources	
Topology-Aware	<ul style="list-style-type: none">• Allocate resources on the same interconnect to the same application• Improve application performance	

Extensions – couches hautes

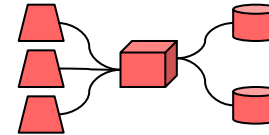
- Orchestration de services et intégration de bout en bout dans le SI



- Orchestration de workload et utilisation des vSys et vApp certifiés de l'écosystème PureSystems



**Pure
Systems Center**



<https://www-304.ibm.com/software/brandcatalog/puresystems/centre/browse#page=1>

- Intégration native avec Chef (Puppet)

Des questions?

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