



# OpenStack Opportunities and Challenges

**Cheng, Hui**  
**freedomhui@gmail.com**  
Community Manager of COSUG  
Technical Manager in Sina.com



# Content

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- OpenStack General Topics
- OpenStack in Sina
- Sina Contribution to OpenStack community

# OpenStack Genesis

In The Era of Virutalization

vmware<sup>®</sup>

is the King

# In The Era of Cloud



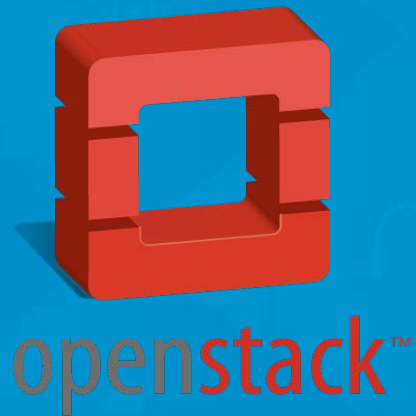
is the defacto IaaS Standard

They are commercial, closed and monopolistic, there are a lot of opensource solutions trying to compete with them:



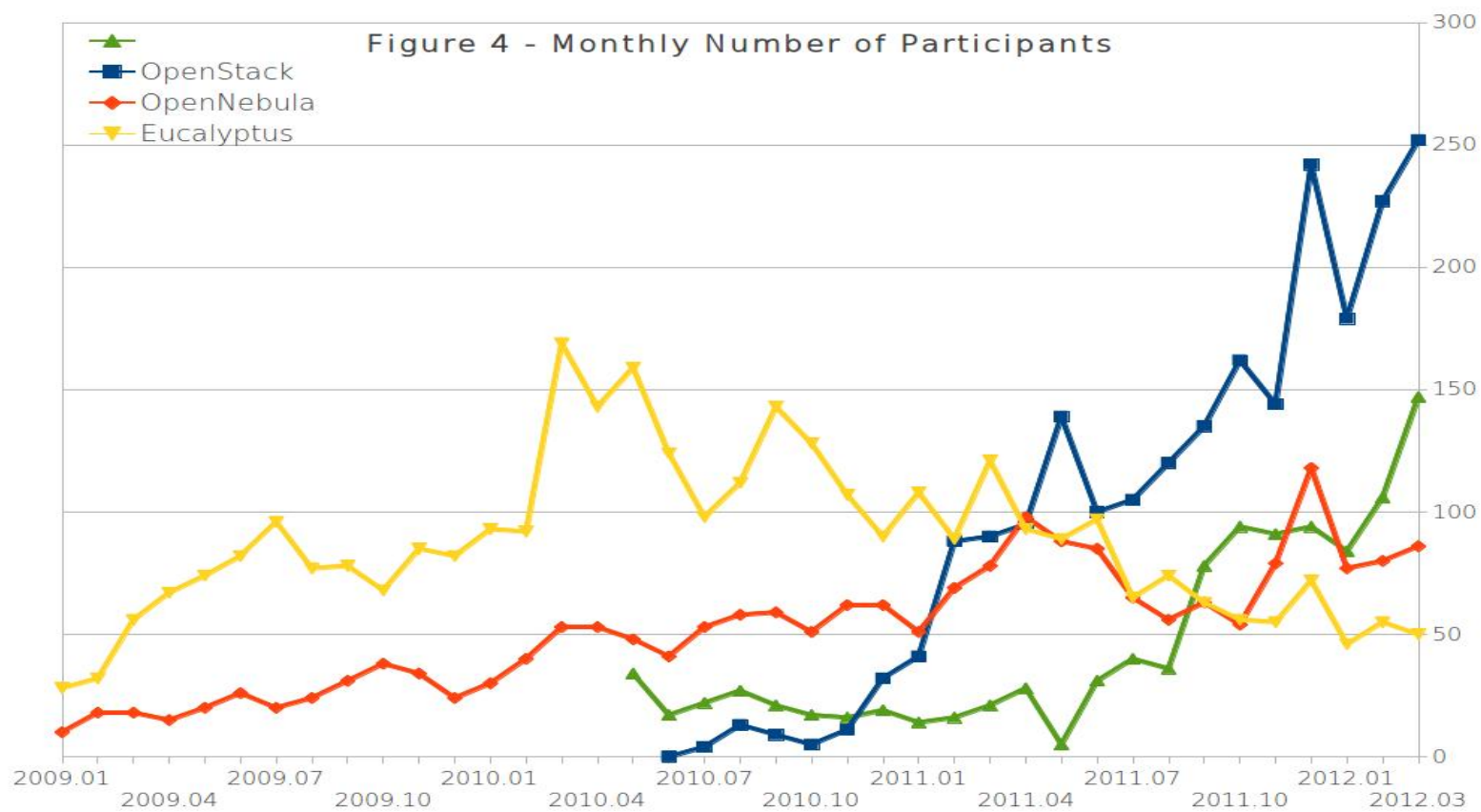
**But they all fail until ...**

In July 2010



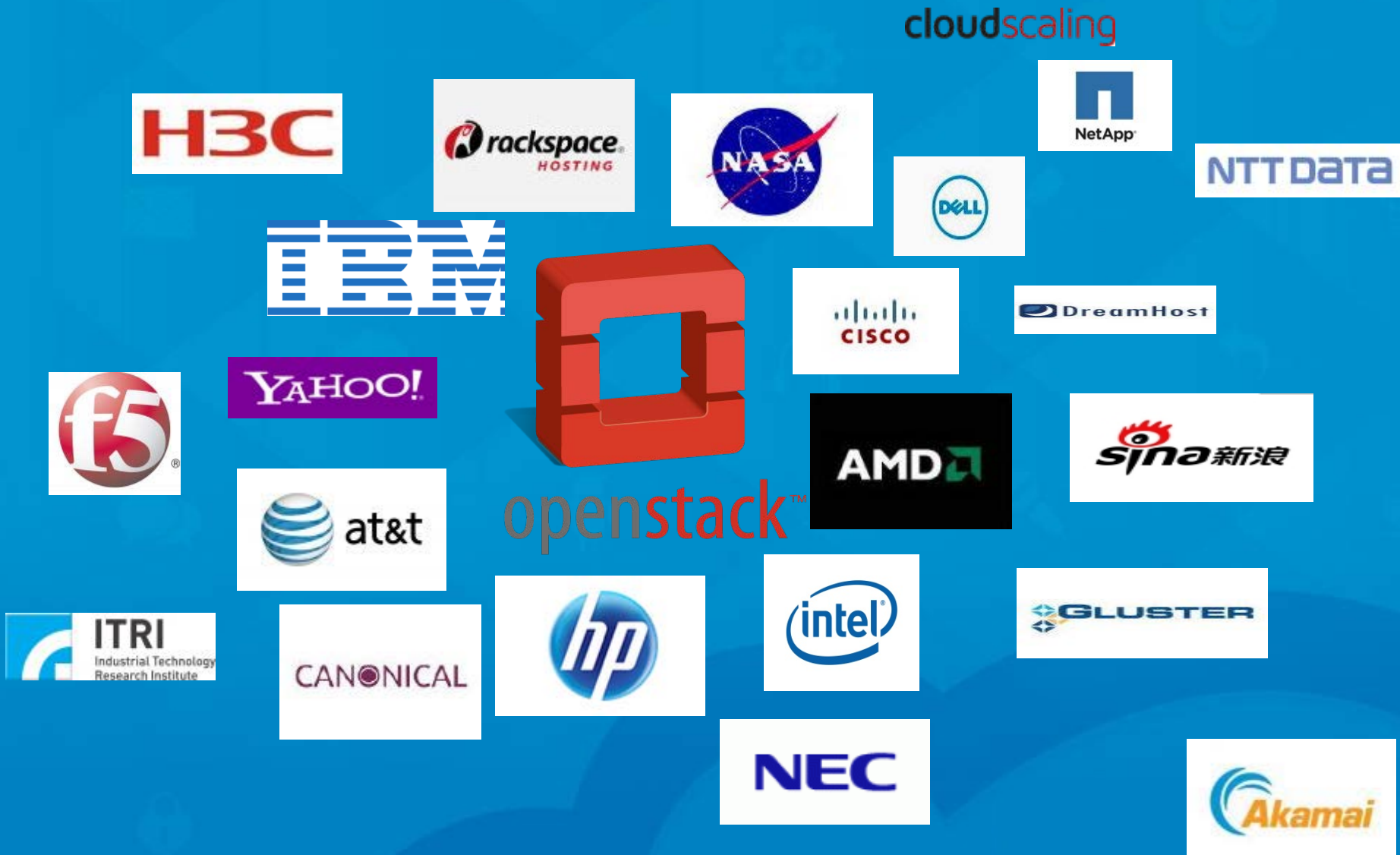
is Born

# Fast Growth





# Evolving Ecosystem



# Amazon's counterattack



Partner to enhance  
Compatibility

# VMware's Redemption

vmware®



\$1.26 billion !

# OpenStack Strength



李勇\_关注云计算★：究竟是什么让openstack从几个开源云平台中脱颖而出？是产品成熟度和技术因素么？这背后的力量又是什么呢？

@程辉：首届OpenStack亚太地区大会本周五即将举行，我有个主题演讲《OpenStack机遇与挑战——基于OpenStack建设IaaS公有云平台》，介绍OpenStack发展与现状以及如何用OpenStack建设公有IaaS等话题，分享我们团队最近几个月的新成果和新观点，欢迎大家前去围观。会议还有更多精彩话题，见<http://t.cn/zWvKpbz>

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Open

# Open Source

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Apache 2 License

# Open Design

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Folsom Design Summit

# Open Development

**OpenStack Compute (Nova)**  
openstack Overview Code Bugs **Blueprints** Translations Answers

## Allow deletes to occur in any state

OpenStack Compute (nova) » Blueprints » Allow deletes to occur in any state  
Registered by [Johannes Erdfelt](#) on 2012-04-21

Deletes are allowed in most states right now, but because of various failure scenarios, there are situations where an instance cannot be fully deleted. Users will want to delete an instance at anytime, for management and billing reasons. If an instance is not in a state that does not safely allow for deletes, then the instance should be hidden from the user (effectively deleted from their perspective) by either moving to another tenant, masking through the database or another means.

[Set the URL for this specification](#)

### Blueprint information

<b>Status:</b> Complete	<b>Approver:</b> <a href="#">Vish Ishaya</a>	<b>Related branches</b> <a href="#">+ Link a related branch</a>
<b>Priority:</b> High	<b>Drafter:</b> <a href="#">Johannes Erdfelt</a>	<b>Related bugs</b> <a href="#">Bug #972320: allow force terminate of instances</a> Confirmed
<b>Direction:</b> Approved	<b>Assignee:</b> <a href="#">Sina Web Service Dev</a>	<a href="#">+ Link a bug report</a> <a href="#">- Unlink a bug</a>
<b>Definition:</b> Approved	<b>Series goal:</b> Accepted for folsom	<b>Sprints</b> <a href="#">+ Propose for sprint</a>
<b>Milestone target:</b> folsom-3	<b>Implementation:</b> Implemented	
<b>Completed by:</b>	<b>Started by</b> <a href="#">Cheng Hui</a> on 2012-05-20	

Propose features in launchpad



# Open Development

The screenshot shows the OpenStack Code Review interface for a specific change. At the top, the OpenStack logo and 'Code Review' are visible. Navigation tabs include 'All Changes', 'My Important Changes', 'Admin Drafts', 'Documentation Watched Changes', and 'Starred Changes'. The main heading is 'Change I1038c314: Deletes vm in any state'. A metadata table lists details like Owner (wenjianhn), Project (openstack/nova), Branch (master), and Status (Review in Progress). A 'Permalink' button is provided. To the right, the change description is shown, including commit details and implementation notes. Below this is a reviewer table with columns for 'Reviewer', 'Verified', 'Code-Review', and 'Approved'. Jenkins is listed as a reviewer with a '+1' in the 'Verified' column. A list of actions (Need Verified, Need Code-Review, Need Approved) and an 'Add Reviewer' button are also present. The 'Dependencies' section is collapsed. The 'Old Version History' shows the current version as 'Base'. The 'Patch Set 2' section displays commit information, including the author (Jian Wen), committer (Jian Wen), parent(s) hash, and download links for checkout, pull, cherry-pick, patch, and various protocols (Anonymous HTTP, SSH, HTTP). A git fetch command is provided at the bottom of the patch set section. At the very bottom, there are buttons for 'Review', 'Diff All Side-by-Side', and 'Diff All Unified'.

**Change-Id:** I1038c3149395a26f35235a91c841fda041e697cc

**Owner:** wenjianhn

**Project:** openstack/nova

**Branch:** master

**Topic:** bp/delete-in-any-state

**Uploaded:** Aug 8, 2012 4:48 PM

**Updated:** Aug 8, 2012 6:05 PM

**Status:** Review in Progress

Permalink

Reviewer	Verified	Code-Review	Approved
wenjianhn			
Jenkins	+1		
Vish Ishaya			
Yun Mao			

- Need Verified
- Need Code-Review
- Need Approved

Name or Email or Group

**Dependencies**

Old Version History: **Base**

**Patch Set 2** 19c98c0c1ce9f25356f604162647c503baa46155 (gitweb)

<b>Author</b>	Jian Wen <wenjianhn@gmail.com> Aug 8, 2012 2:19 PM
<b>Committer</b>	Jian Wen <wenjianhn@gmail.com> Aug 8, 2012 5:43 PM
<b>Parent(s)</b>	a418654b070c63c4bed5e3e5523fb947934626f9 Merge "Cleanup consoles test cases"
<b>Download</b>	<a href="#">checkout</a>   <a href="#">pull</a>   <a href="#">cherry-pick</a>   <a href="#">patch</a>   <a href="#">Anonymous HTTP</a>   <a href="#">SSH</a>   <a href="#">HTTP</a>

git fetch https://review.openstack.org/openstack/nova refs/changes/14/11014/2 && git checkout FETCH\_HEAD

# Code Review

# Open Community

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IRC meeting are open to everyone  
OpenStack Foundation

# OpenStack Projects

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## Core Projects

- OpenStack Compute(Nova)
- OpenStack Object Storage(Swift)
- Image Service (Glance)
- Identity (Keystone)
- Dashboard (Horizon)
- Network Connectivity (Quantum)

## Community Projects

- IP Management: Melange
- Load Balancer: Atlas-LB
- Database as a Service: RedDwarf
- Message Queue: Burrow

AWS	OpenStack
EC2	nova
S3	swift
EBS	nova-volume
ELB	Atlas-LB
SQS	Burrow
Console	Dashboard
IAM	Keystone
VPC	Quantum
RDS	RedDwarf

# OpenStack Chances

OpenStack is still far from being a  
"turnkey" solution

# OpenStack Startups

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# OpenStack Public Cloud

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Cloud Services



the  
rackspace  
cloud



 eno**cloud**



Sina Web Services

# Domestic Market

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## Public Cloud

Aliyun, GrandCloud, SinaCloud...  
Who will be the Chinese AWS ?

## Private Cloud

No competitive candidates till now\*  
OpenStack based solution will sweep away  
the private market



# OpenStack Challenges



Iron-安荣：刚刚测试使用过openstark，相比ibm的管理工具有待提升！

@程辉：首届OpenStack亚太地区大会本周五即将举行，我有个主题演讲《OpenStack机遇与挑战——基于OpenStack建设IaaS公有云平台》，介绍OpenStack发展与现状以及如何用OpenStack建设公有IaaS等话题，分享我们团队最近几个月的新成果和新观点，欢迎大家前去围观。会议还有更多精彩话题，见<http://t.cn/zWvkpbz>

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答搭：离产品还是有点距离 // @吕\_小佈：开发着关注着openstack功能，但也不要忽视了运维在openstack产品商业化中的重要性。目前来说，时常的error是不可避免的。troubleshooting目前还停留在对openstack使用的比较熟练的基础上。期待有个专门用来分析日志甚至进行错误管理的项目。毕恢复程序的正常运行是

@程辉：首届OpenStack亚太地区大会本周五即将举行，我有个主题演讲《OpenStack机遇与挑战——基于OpenStack建设IaaS公有云平台》，介绍OpenStack发展与现状以及如何用OpenStack建设公有IaaS等话题，分享我们团队最近几个月的新成果和新观点，欢迎大家前去围观。会议还有更多精彩话题，见<http://t.cn/zWvkpbz>

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转发(154) | 评论(37)

8月6日19:35 来自Weico.iPhone

转发(1) | 收藏 | 评论(1)

# Shortage of OpenStack Telants

# OpenStack in Sina

# About SinaCloud

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First and most popular PaaS cloud  
in China, launched in 2009  
Support PHP, Python and Java  
runtime



新浪云计算  
sinacloud.com

[SAE是什么](#)

[为何选择SAE](#)

[开始使用SAE](#)

PHP5      Crontab      XHprof      Replication

Memcache

**简单高效的应用开发和运行平台**

High performance

Application Cloud      Distribute      SDK      Mysql5

Storage

 **新浪移动云**

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 **SAE云主机**

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[找回微博密码](#)

3分钟完成一个Web应用



环境和服

- PHP5
- MySQL
- Memcache
- Crontab
- Mail

最近更新

- SAE本周新增
- 流量计费价格下调
- **【重要】** 微博SDK紧急升级
- SAE每周更新(12/09)
- SAE本周服务更新

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欢迎使用 Sina App Engine

[请点此登录](#). 如果您没有帐号, [请点此注册](#).

[TOP](#)

# About SinaCloud

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新浪云计算  
sinacloud.com



Sina App Engine

First and most popular PaaS cloud in China, launched in 2009  
Support PHP, Python and Java runtime



Sina Web Services

OpenStack based public IaaS cloud



0.00元 充值  
9389.93元 代金券

云主机

- 概览
- 虚拟机
- 镜像
- 快照
- 安全组
- 密钥
- 公网IP
- 负载均衡

云存储

- 文件管理
- 存储防火墙

云监控

- 监控
- 报警

CDN

- CDN

帐户

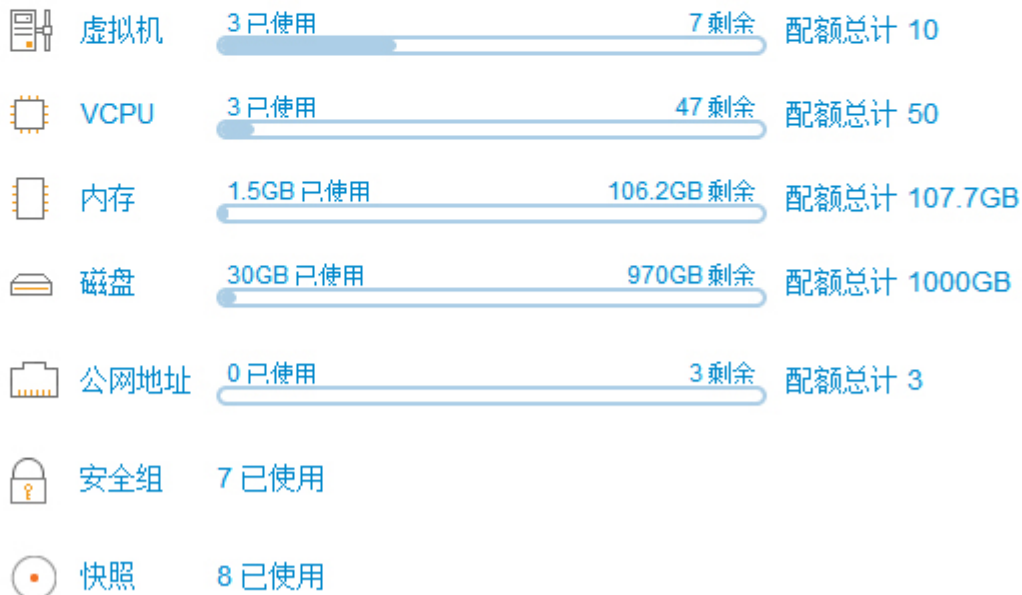
- 余额
- 账单

即刻享用SINA Web Services服务

创建虚拟机

我的资源

扩容申请





# About SinaCloud

---



新浪云计算  
sinacloud.com



Sina App Engine

First and most popular PaaS cloud in China, launched in 2009  
Support PHP, Python and Java runtime



Sina Web Services

OpenStack based public IaaS cloud



新浪云商店  
(SinaCloud Store)

SaaS cloud based on SAE tech.  
Design for the masses  
1-Click buy and install apps



找应用

全部分类

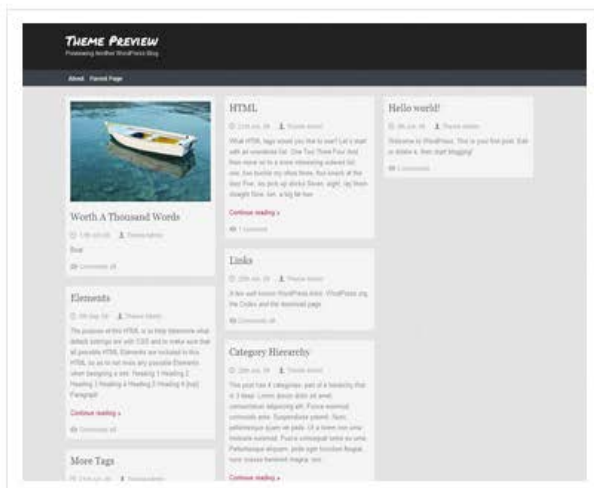
博客系统

WordPress 博客

实用工具

协作办公

首页 / WordPress 博客 / WordPress 瀑布流主题



## WordPress 瀑布流主题

价格：**1元** (折算云豆100颗)

代码授权月费：**免费** 云空间价格：**1.00元/月**

演示地址：[-](#)

供货商：[@Easy](#)

购买次数：**140次**

购买月数：**(内测期购买最长时间为半年)**

一个月

三个月

半年

云空间类型：

内测用

入门级

基础级

购买

意见反馈

# Sina Web Services(SWS)

---

To salute Amazon Web Services

It's an validated and successful cloud business model.

Customers

Game makers on Weibo platform

Sina Partners

Common users out of Sina

Vision

Build an open and full-stack cloud ecosystem, integrated IaaS, PaaS and SaaS platform.

# Cloud Bridge



## 应用信息

- 汇总信息
- 预算设置
- 资源报表
- 服务状态

## 应用管理

- 应用设置
- 成员管理
- 代码管理
- 管理记录
- 应用防火墙 alpha
- AppConfig alpha

## 应用调优

- 预定义变量

wss127 » 虚拟机

## Cloud bridge 简介

SAE通过SWS提供云主机服务，出于安全方面考虑，SAE禁止通过内网直接访问SWS的虚拟机。

为使SAE的应用可以直接通过内网连接虚拟机，SAE推出Cloud bridge服务。

创建虚拟机

## 虚拟机授权管理

 授权  取消授权

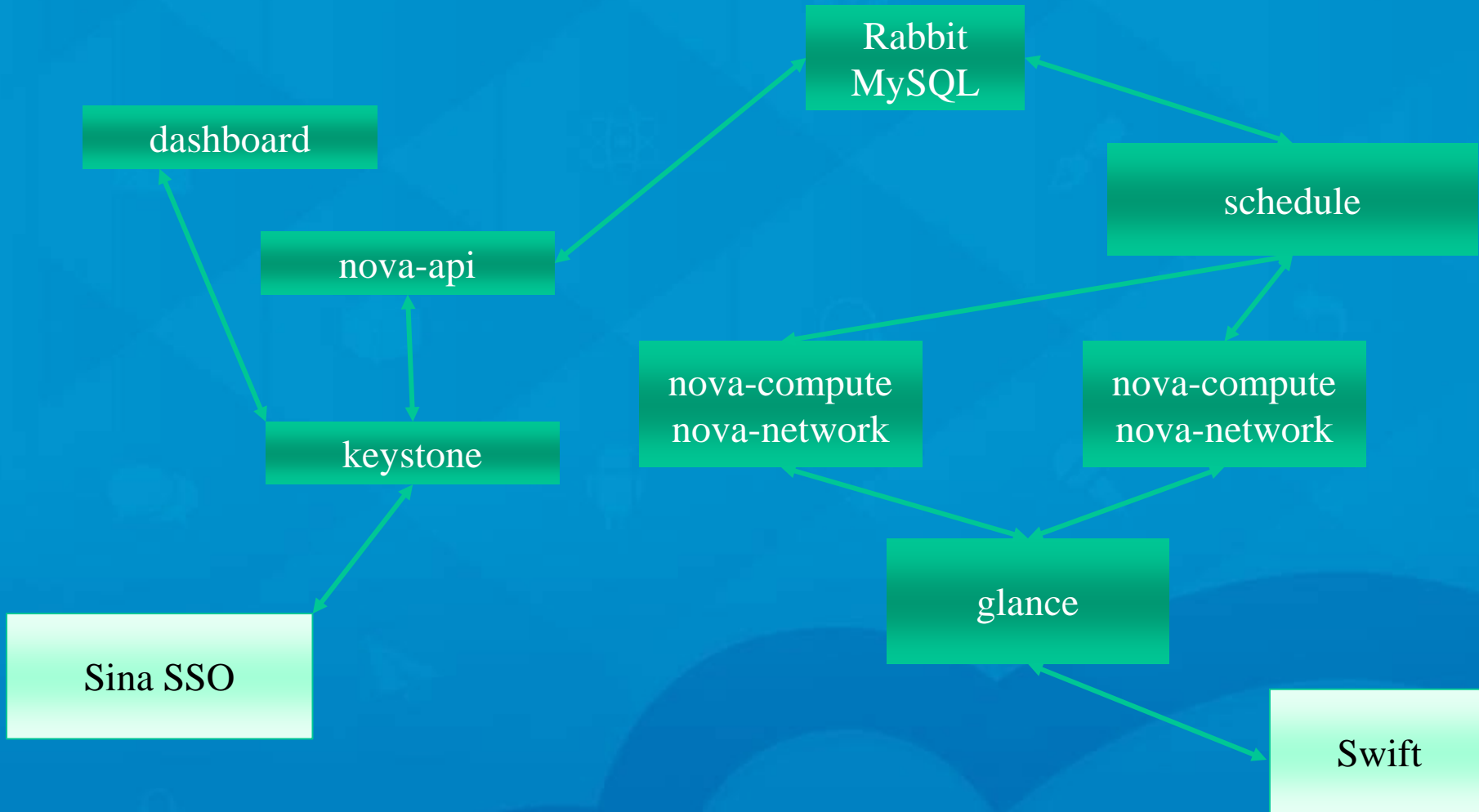
<input type="checkbox"/>	虚拟机名称	内网IP	授权状态
<input type="checkbox"/>	 VM01	192.168.1.1	未授权
<input type="checkbox"/>	 VM02	192.168.1.2	已授权
<input type="checkbox"/>	 VM03	192.168.1.3	已授权
<input type="checkbox"/>	 VM04	192.168.1.4	未授权

### 虚拟机授权提示

如您已授权本应用访问某虚拟机，则您还需要 [登录SWS](#)，修改安全组授权Cloud Bridge(202.202.202.202, 202.202.202.202, 202.202.202.202) 访问虚拟机的某个端口。

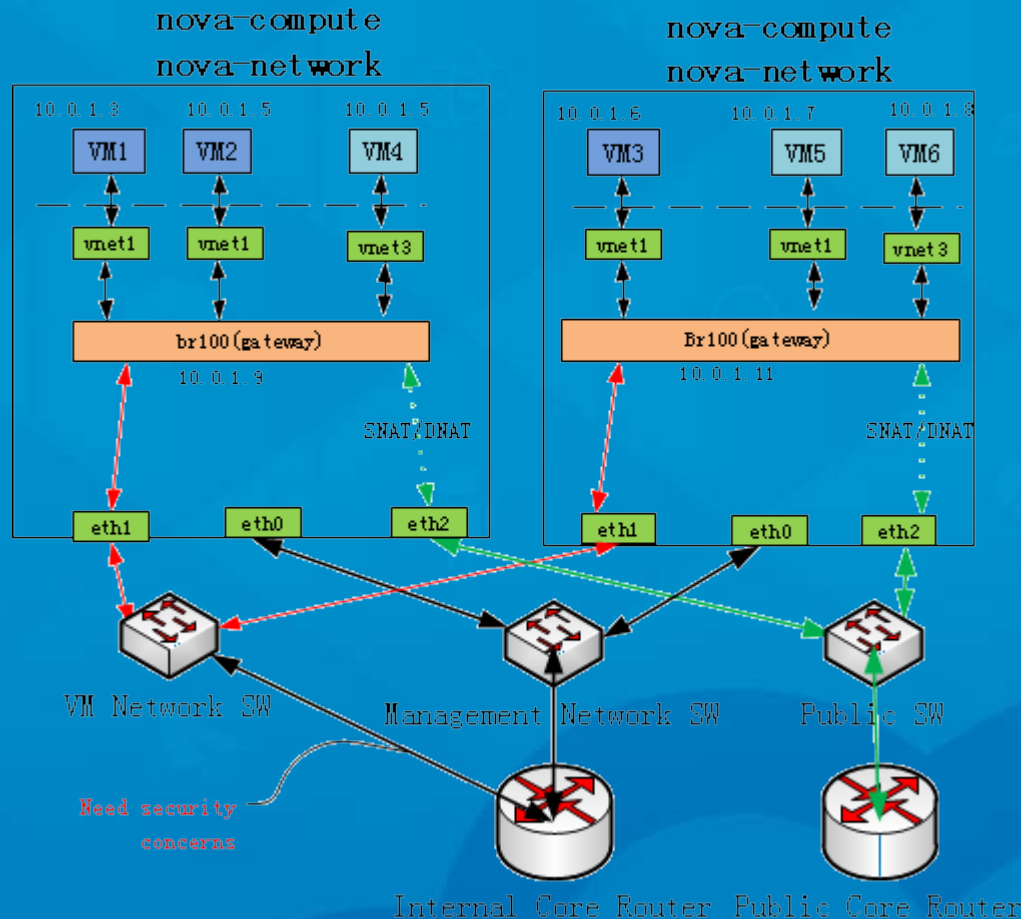
# SWS Deployment

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# SWS Network Topology

## Nova Network Topology (Flat & multihost)



# SWS Security Enhancement

## SWS Filter

### Prevent Intranet Penetration

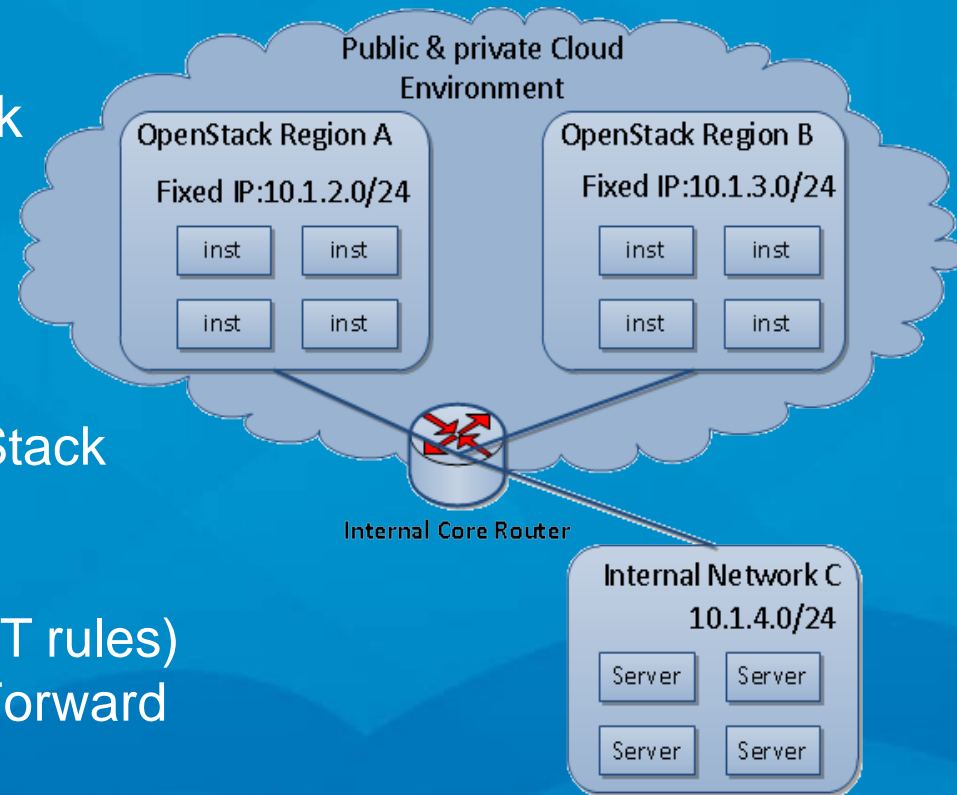
Intranet is the internal network outside of OpenStack

### Egress filtering

- Target is internal network
- Source is instances in OpenStack

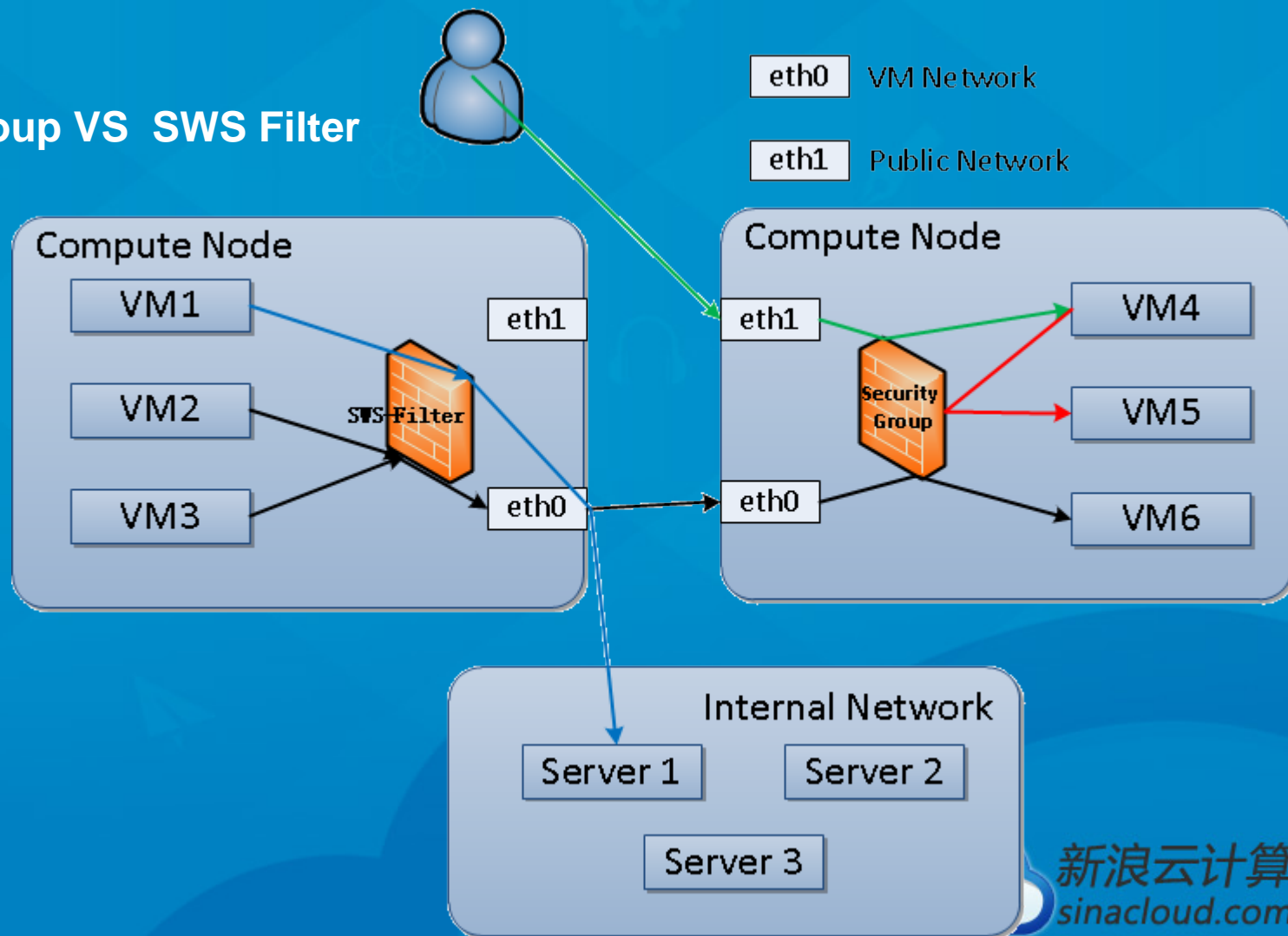
### Implementation

- Whitelist mechanism(ACCEPT rules)
- On the top of nova-filter-top Forward Chain



# SWS Security Enhancement

## Security Group VS SWS Filter





# SWS Load Balancer

## Goals

### Load Balance

- Dispatch request
- Support multiple routing algorithm
- Health check

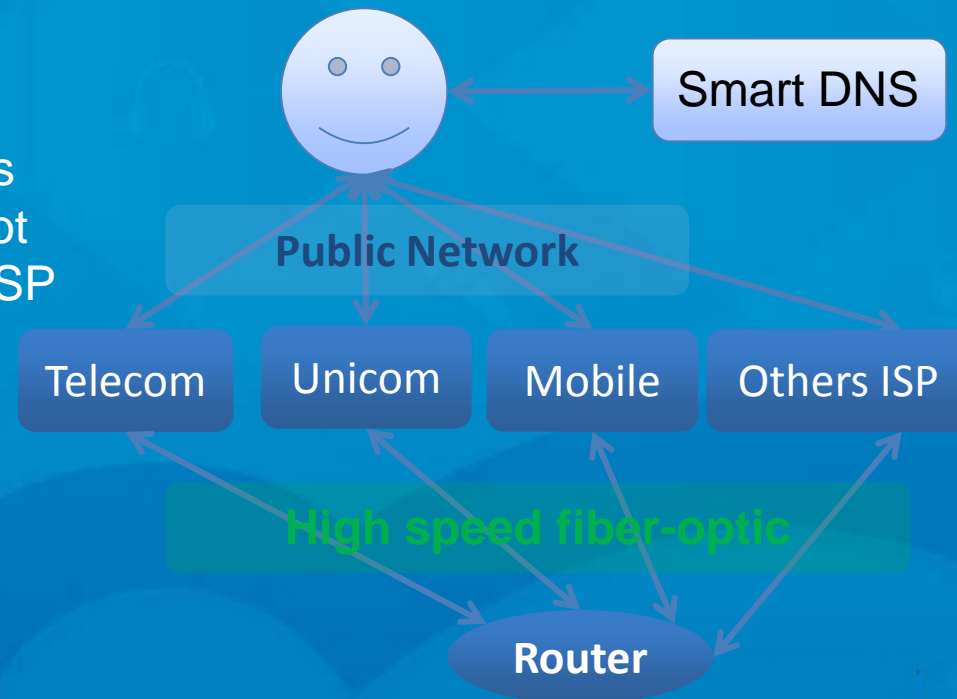
### Acceleration

- Reality: narrow bandwidth between ISPs
- Building fiber channels from ISPs to pivot
- Given the same endpoint within user's ISP

### IPv4 Shortage

- Reality: dozens of public IPs support hundreds of VMs
- IPv4 has been exhausted
- IPv6 is not realistic yet in China

## DNS Acceleration Design



# Object Storage

 **Sina Web Services** 程辉 | 帮助 | 面板设置 | 注销

0.00元 充值  
9389.93元 代金券

<input type="checkbox"/>	容器	对象列表	大小
<input type="checkbox"/>	p	1	83.2 KB
<input type="checkbox"/>	pt	0	0 字节

目前有2个项目

- 云主机
  - 概览
  - 虚拟机
  - 镜像
  - 快照
  - 安全组
  - 密钥
  - 公网IP
  - 负载均衡
- 云存储
  - 文件管理
  - 存储防火墙
- 云监控
  - 监控
  - 报警
- CDN
  - CDN
- 帐户
  - 余额
  - 账单

# Storage Firewall

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 0.00元 充值  
9389.93元 代金券

选择存储容器 容器A ?

**白名单**  
允许将特定IP加入白名单，加入白名单则跳过过滤，支持掩码

白名单数量：  
**0/100** 添加白名单

**黑名单**  
允许将特定IP加入黑白名单，加入黑名单则拒绝访问，支持掩码

黑名单数量：  
**0/100** 添加黑名单

**访问频率配置**  
针对所有来源IP，设定一段时间内的访问频率(5分钟/24小时)

单IP访问频率控制：  
**5000**次/5分钟之内 访问频率设置  
**500000**次/24小时之内

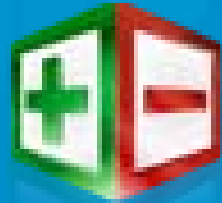
**访问流量配置**  
针对所有来源IP，设定一段时间内的流量限制(5分钟/24小时)

单IP访问流量控制：  
**0M**/5分钟之内 访问流量设置  
**0M**/24小时之内

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# SWS continuas integration

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GITORIOUS

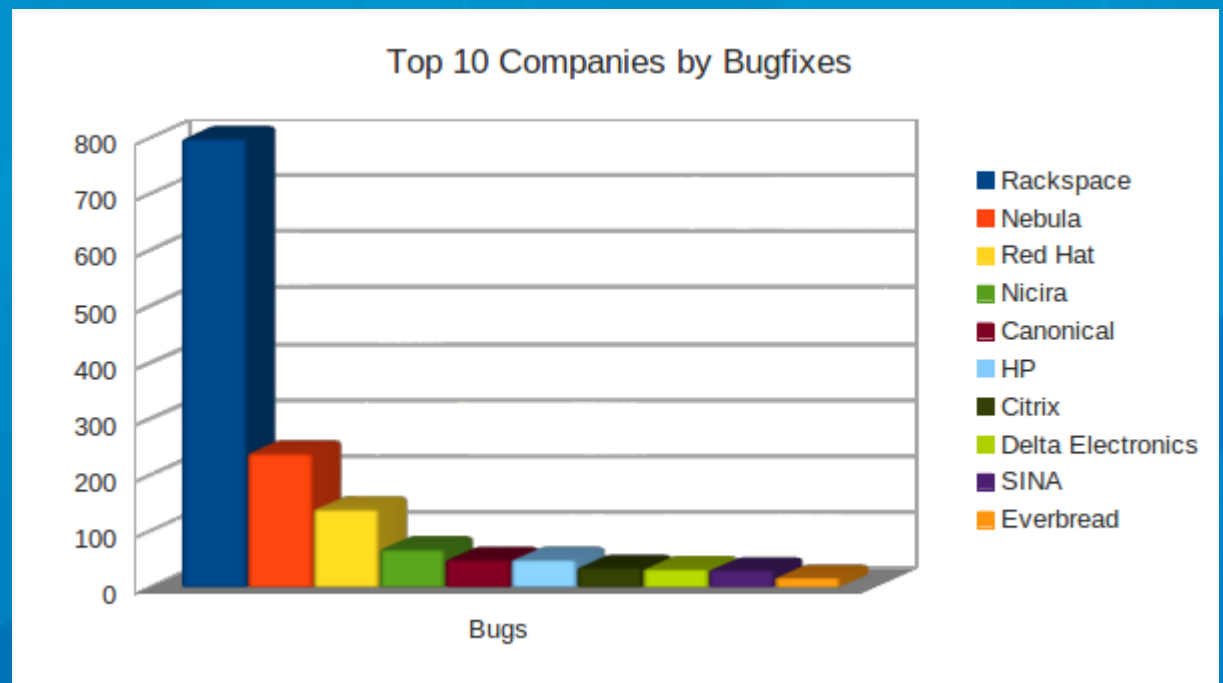


**Jenkins**

# Sina Contribution

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- Sina creating OpenStack community project **Dough & Kanyun**, to contribute metering & billing capability
- Present in OpenStack Design Summit & Conference
- Claim and submit dozens of blueprints in OpenStack Launchpad
- Top 10 Companies by bugfixes



# What's the kanyun

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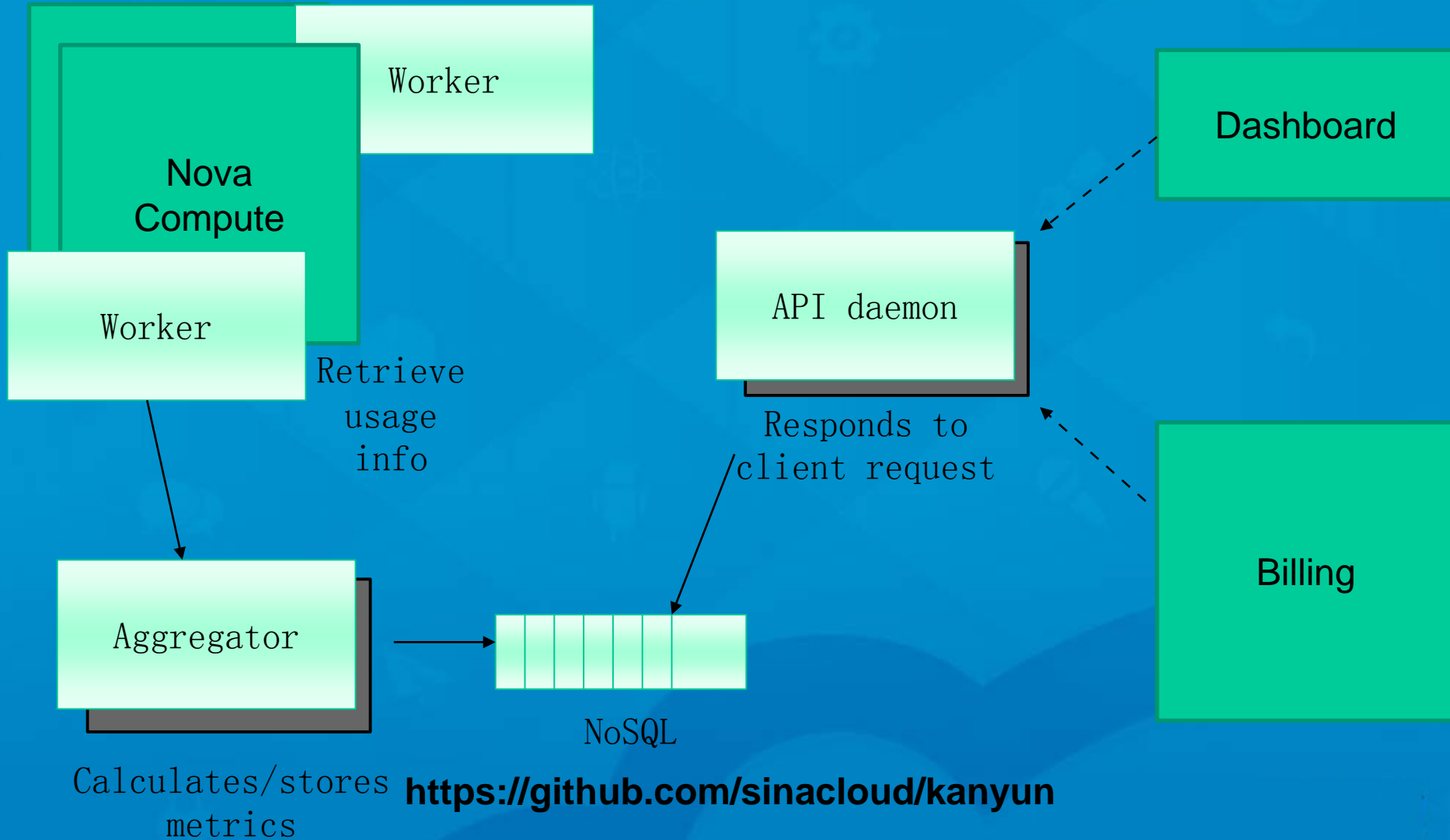
## **Monitoring tools**

Tracking the tenant resource usage:  
CPU、mem、disk、network traffic

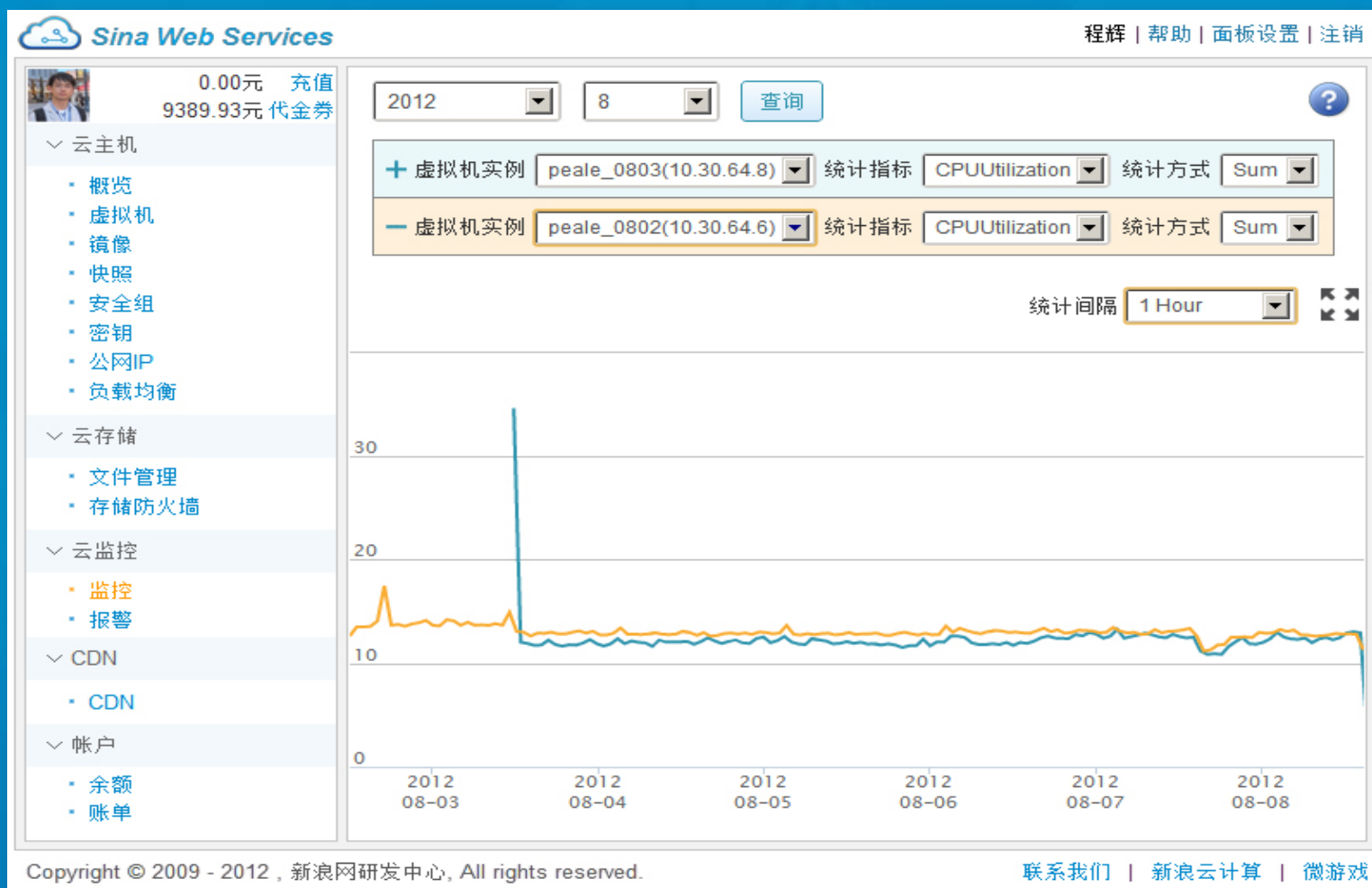
## **Metering tools**

Data collection and statistics

# Kanyun: Monitoring system



# What's the kanyun



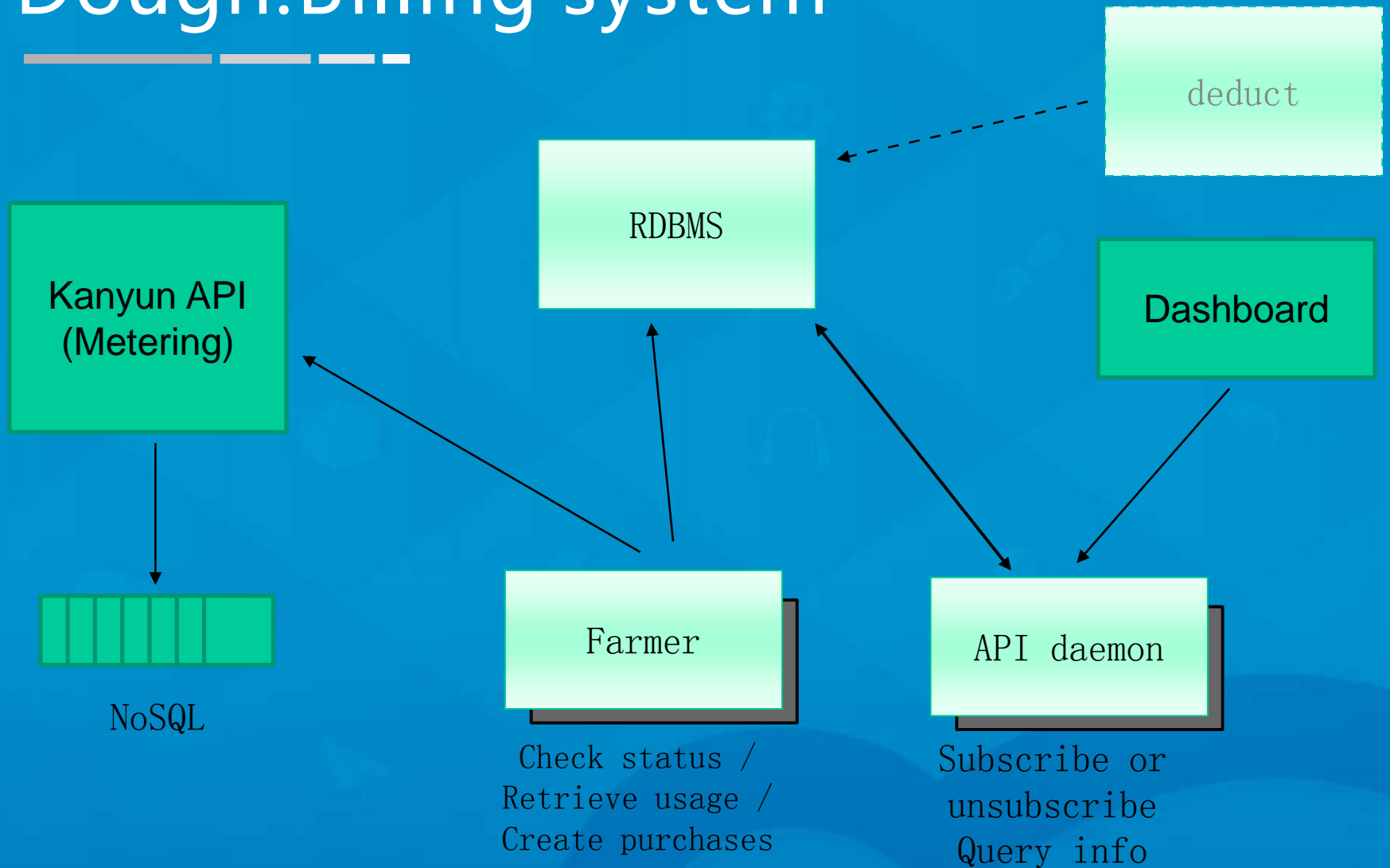


# Dough: Billing system

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- Keep track of billing info to charge tenants
- Flexible customization of payment policies
- How much/often to charge for resource unit
- Handles prepaid or pay-as-you-go
- Coupon Support

# Dough: Billing system



<https://github.com/sinacloud/dough>

# Dough: Billing system

Sina Web Services 程辉 | 帮助 | 面板设置 | 注销

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9389.93元 代金券

月度账单 2012

- 云主机
  - 概览
  - 虚拟机
  - 镜像
  - 快照
  - 安全组
  - 密钥
  - 公网IP
  - 负载均衡
- 云存储
  - 文件管理
  - 存储防火墙
- 云监控
  - 监控
  - 报警
- CDN
  - CDN
- 帐户
  - 余额
  - 账单

月份	总计	虚拟机费用	带宽费用	公网IP费用	负载均衡费用
八月	95.71元	95.71元	0.00元	0.00元	0.00元
<input checked="" type="checkbox"/> 七月	6920.65元	6832.46元	0.19元	64.00元	24.00元
六月	5691.23元	5459.10元	41.13元	172.00元	19.00元
五月	3578.30元	3564.30元	0.00元	14.00元	0.00元

所有 虚拟机 带宽 公网IP 负载均衡

类型	服务名	价格	开始时间	结束时间	数量	总计
load_balancer	peaatest	1.00 元/天	2012/06/11 09:57	2012/07/14 09:57	14 天	14.00 元
load_balancer	lbhttp2	1.00 元/天	2012/07/04 11:48	2012/07/14 11:48	10 天	10.00 元
instance	ps	0.42 元/小时	2012/05/29 15:27	2012/05/30 14:53	456 小时	191.52 元
instance	ux	3.33 元/小时	2012/05/29 18:39	2012/05/30 10:36	456 小时	1518.48 元
instance	ulcopy	1.67 元/小时	2012/05/29 18:42	2012/05/30 14:58	456 小时	761.52 元
instance	utcopy	0.17 元/小时	2012/05/29 18:49	2012/05/30 14:58	456 小时	77.52 元
instance	ps	400.00 元/月	2012/05/30 15:38	2012/05/30 17:14	1 月	400.00 元

Thank you, OpenStack  
Community and Foundation.

Thanks!

Q & A

Weibo: @程辉  
freedomhui@gmail.com