

# Examples:

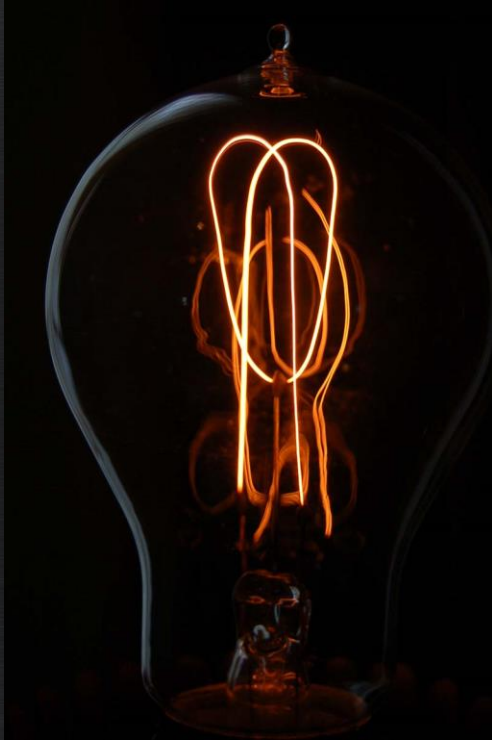
Of other recent changes  
And changes under discussion

# Other Changes in the last 2 years

Change	Description
<b>Design Reviews</b> <b>Design Docs</b> <b>API Docs</b>	More focus on design reviews, designs as specs, in-code API docs <ul style="list-style-type: none"><li>• Avoid disagreement later in the review cycle</li><li>• Create a “knowledge base” for new developers</li></ul>
<b>Test Lab</b> <b>OSSTEST</b>	Increased Focus on Quality Share the cost of testing (Past: everyone tested independently)
<b>Release</b> <b>Management</b> <b>4.6</b>	Slightly shorter release cycle Harder freeze dates Branch master earlier → longer active development period
<b>Release</b> <b>Management</b> <b>4.7</b>	Short and fixed release cycle (June and December) Even harder freeze dates: no feature freeze exceptions <ul style="list-style-type: none"><li>• Make it easier for consumers of Xen to plan their products</li><li>• Decrease the impact of features not making it into Xen x.y</li></ul>

# Changes proposed/under discussion

Change	Goals
Feature Maturity Lifecycle	<ul style="list-style-type: none"><li>• Better understanding of feature maturity for users</li><li>• Encourage more testing: only tested features can be “supported”</li><li>• Find a way to classify non-core features</li></ul>
Decision Making	<ul style="list-style-type: none"><li>• Not optimized for “process and convention changes”</li><li>• Make the process clearer and streamline it</li></ul>
Review Process Review Criteria	<ul style="list-style-type: none"><li>• Contributing to Xen has become harder</li><li>• This just happened, without being discussed, and came as a surprise</li><li>• Caused issues because of mismatching expectations</li></ul>
Contribution Reporting	<ul style="list-style-type: none"><li>• Find better ways to high-light non-code contributions</li><li>• Encourage more code reviews and tests</li></ul>
Roles / Project Leadership	<p>Conducted a survey in Q3’15: still early days</p> <ul style="list-style-type: none"><li>• Highlighted <u>different</u> expectations by <u>different</u> people</li><li>• Have a range of options to improve things</li></ul>



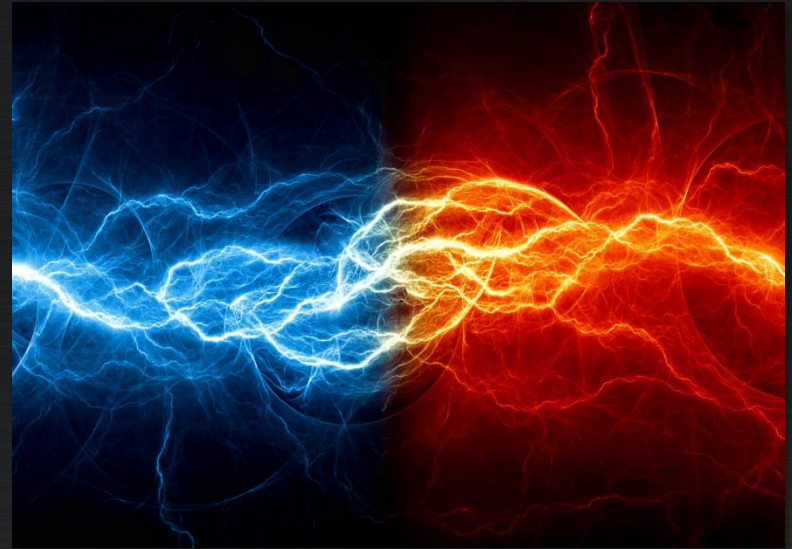
## Lesson

The project is adapting to a changing environment

Don't get caught out by changes

Participate in discussions

We are facing new tensions,  
that require to make conscious  
trade-offs





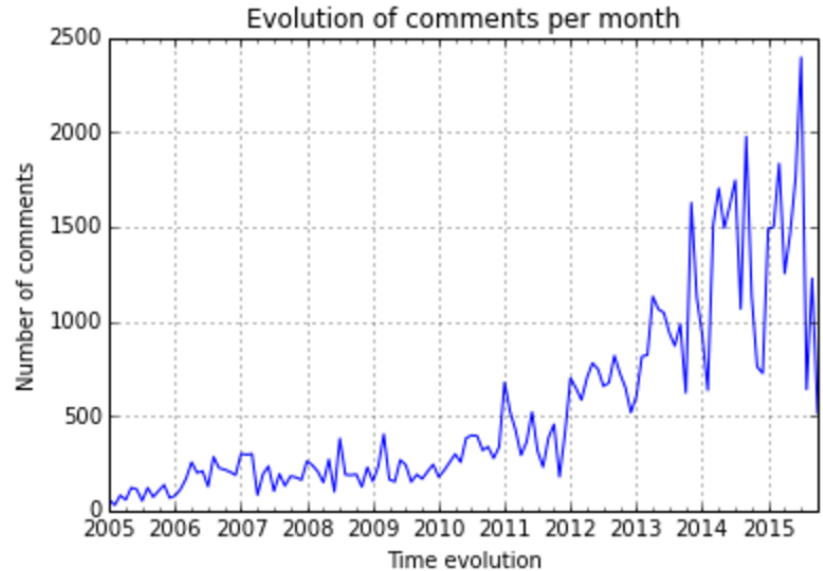
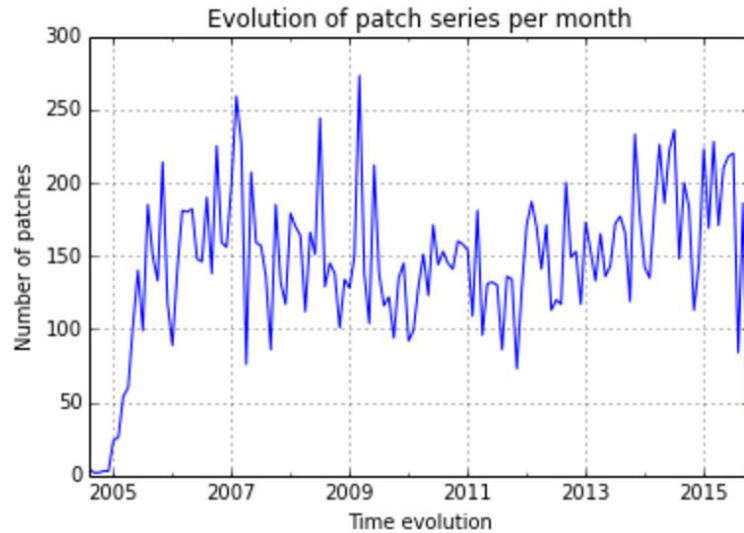
New Features  
Community Growth



Review Capacity  
Review Criteria

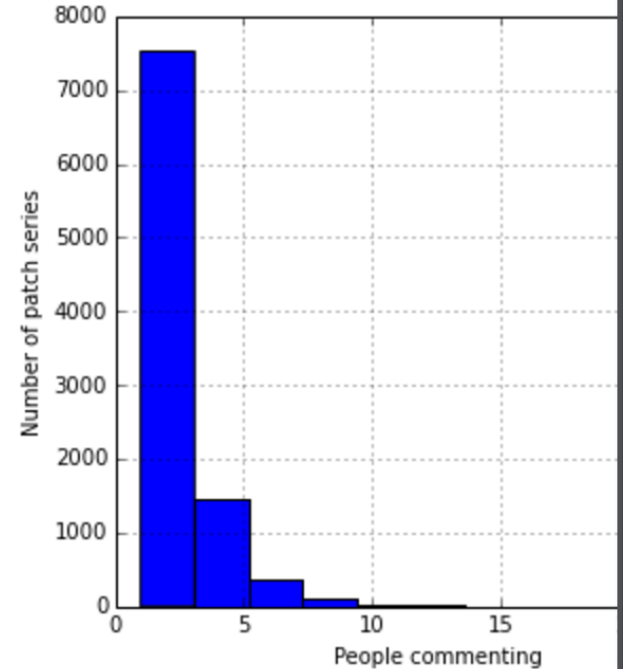
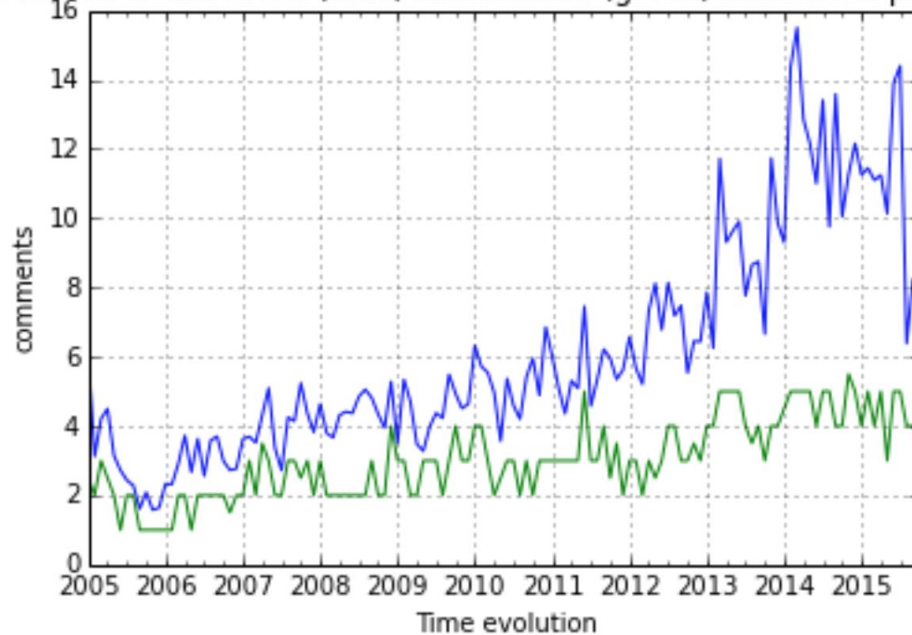
**Goal: Better Quality & Security**  
**Contributor – Maintainer Interaction**

# Patches and Comments posted



# Comments per patch / Reviewers

Evolution of the mean (blue) and median (green) comments per patch

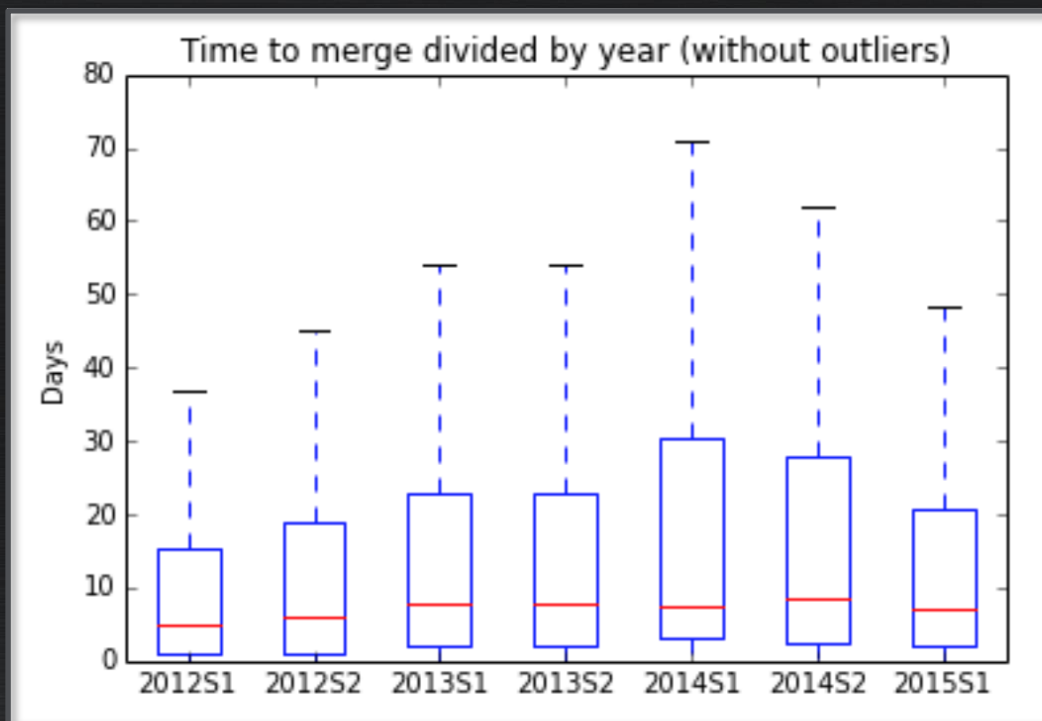




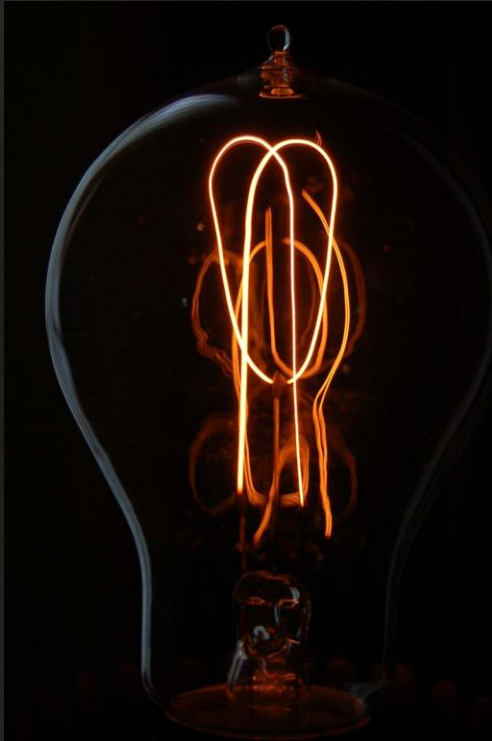


**We have a problem: more contributions, tougher contribution requirements, same number of reviewers, number of patches under review is growing**

# It takes longer to get changes into Xen



We managed to part-fix this through **training** of new contributors, **process changes**, better co-ordination



## Tougher requirements on Quality gradually happened

There was no discussion about the quality-contribution trade-off, which led to surprises and some contributors having wrong expectations

In fact: we didn't know this was happening until recently

# Implications for Contributors

For new contributors contributing up to smaller 10-15 patches per year:

- None

For new contributors planning to contributing complex and 15+ patches per year:

- Reviewers are **less willing** to review patches without **getting something in return**

At a minimum:

- Engage with the **Roadmap Process** : Communicate **your priorities**
- **Submit early** in the review process and **submit designs early** for complex code
- Have **realistic expectations**

Ideally:

- Observe patch reviews on xen-devel@ and **help with patch reviews** of other people's code
- **Help with testing** (test days, test reports, test code)
- Long term: work towards **maintainership of components/features** you care about

100 - 500 patches  
under review at any given time

Larger patches need  
ACKs from 3-5 people



# Coordination: The paint-gun problem

100 - 500 patches under active review



Reviewers review according to their **own schedule** and **own priorities**.

There is no **centralized priority list**.

You may need to **ping** reviewers: **overdoing** this is **counter-productive** (may be considered as hassling).

New Features  
Community Growth



Quality, Security  
Different use-cases

## Conflicting Requirements

e.g.

cloud / enterprise vs. security vendor  
cloud / enterprise vs. embedded vendor

# Security Scrutiny

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## Xen shows off 35-piece cloudpocalypse collection

The latest fixing fashions for open-source hypervisors hit the catwalk



## Xen patches admin privilege escalation vulnerability

Powered by SC Magazine **SC** MAGAZINE

By **Juha Saarinen** on Jul 10, 2015 6:51 AM  
Filed under **Security**

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### Allows admins with limited privileges to take full

Open source hypervisor developer Xenproject has issued a patch management tool vulnerability that could allow administrators with privileges to take full control of the whole host.



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## Guest-host escape bug sees Xen project urge rapid upgrade

Xen hypervisor v.4.5.1 offers over 100 fixes and improvements



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## Xen reports new guest-host escape, this time through CD-ROMs

Don't stick your head in the sand, patch QEMU

## Xen warns of new Venom-like vulnerability

Powered by SC Magazine **SC** MAGAZINE

By **Juha Saarinen** on Jun 29, 2015 12:35 PM  
Filed under **Security**

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2 Comments



Xen-o-morph.

### Heap overflow in QEMU PCNET NIC lets guests take over hosts.

A newly discovered flaw in the popular open source Xen virtualisation hypervisor layer has prompted the Xen Project to urge users to update from the vulnerable version 4.5 to **version 4.5.1** as soon as possible.

According to the Xen Project security team, the XSA-135 flaw is a heap overflow in the Quick Emulator code for the PCNET network interface



# Security Scrutiny

Media coverage is just a side-effect.

We care about ...

- There are people out there trying to break Xen
- And use exploits against Xen users



This means ...

- Code is **reviewed with security in mind**
- **Think about security** when designing a feature
- **Think about security** before submitting a patch
- You may be asked to **modify related code that is related to your patch** (often reviewers code “surrounding” your patch)

# Easy Ways to get Involved

## Fix some Coverity Scan Issues

- You can get access : see [xenproject.org/help/contribution-guidelines.html](http://xenproject.org/help/contribution-guidelines.html)
- Small, bite-size issues to practice contributing to Xen