



Xen Project Weather Report

July 2017



Lars Kurth
Community Manager, Xen Project
Chairman, Xen Project Advisory Board

  lars_kurth



A Thank you to our Sponsors

DIAMOND SPONSOR

CITRIX[®]



GOLD SPONSORS

ARM[®]



QUALCOMM[®]

SUPERFLUIDITY 

**We have done and changed a lot
in 2016 and 2017**

Focus: on more efficiency

Significant Governance Changes

Leadership Teams & Decision Making

In progress: CNA, formalizing supported/experimental/...

Infrastructure and Tooling

Rack 2 in our Test Lab (50% full)

Http to Https for all sites

Core Infrastructure Badge

RT for security@ to track issues

Jira for feature tracking and critical issues:

<https://xenproject.atlassian.net>

New Advisory Board Member

Qualcomm

Releases

Xen Project Hypervisor 4.8 & 4.9 Releases

Windows PV Driver Release 8.1.2 (signed drivers)

Mirage OS 3.0



More and Better Collaboration

At the Leadership Team Level

Security Team

But also in the wider community

Amongst Contributors (sharing work such as PVHv2)

Fewer Conflicts than in the Past

We all have become better at resolving different opinions

BUT: still quite a few bike-shed issues

More Upfront Planning, Designs, ...

Designs, ABIs, etc.

ARM Community Call

Avoiding community issues earlier



A scenic view of a tropical beach with turquoise water and a clear blue sky. The text is overlaid on the image.

Thank you!

Keep up the good work!

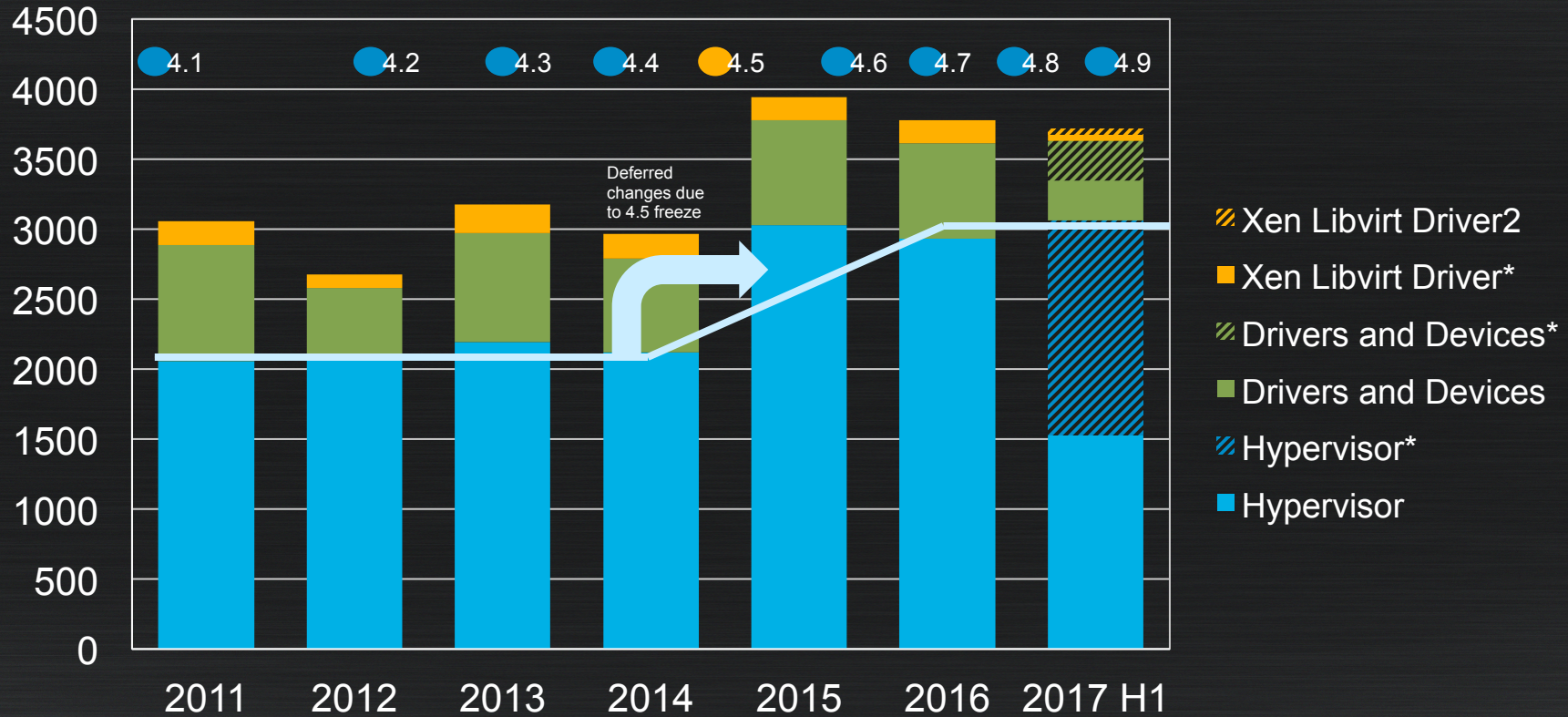
Build bridges and relationships!

Make use of the next 3 days!

**A diverse, vibrant
and growing
community**



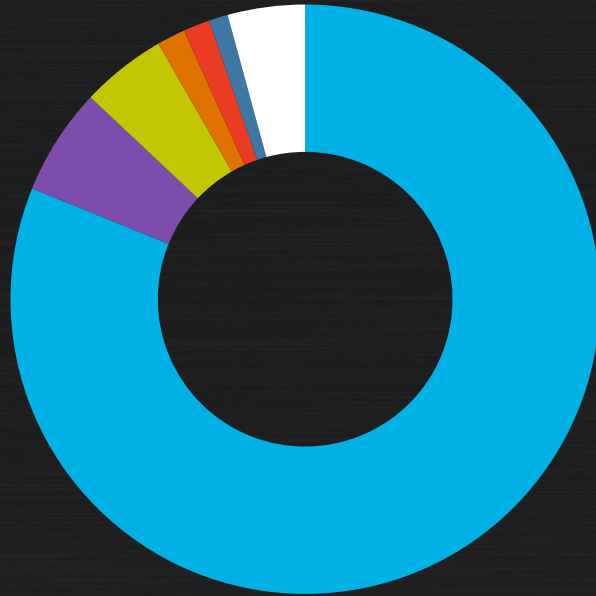
Hypervisor Stack Git Commits



2009: Hypervisor Stack Top Players

Top:

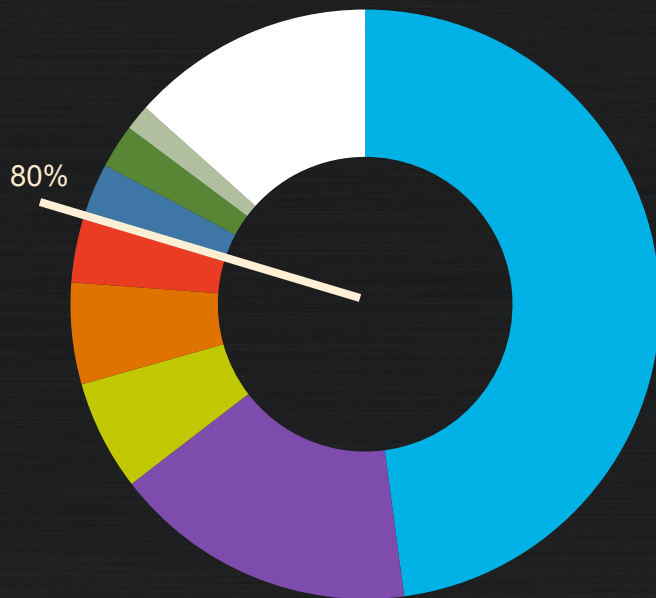
Citrix	81%
NetXen	6%
NetBSD	5%
Red Hat	2%
VA Linux	1%
Qlogic	1%
Other	4%



2015: Hypervisor Stack Top Players

Top:

Citrix	48%
Suse	17%
Oracle	6%
Intel	6%
Red Hat	4%
Linaro	3%
FreeBSD	2%
Star Lab	1%
Other	13%



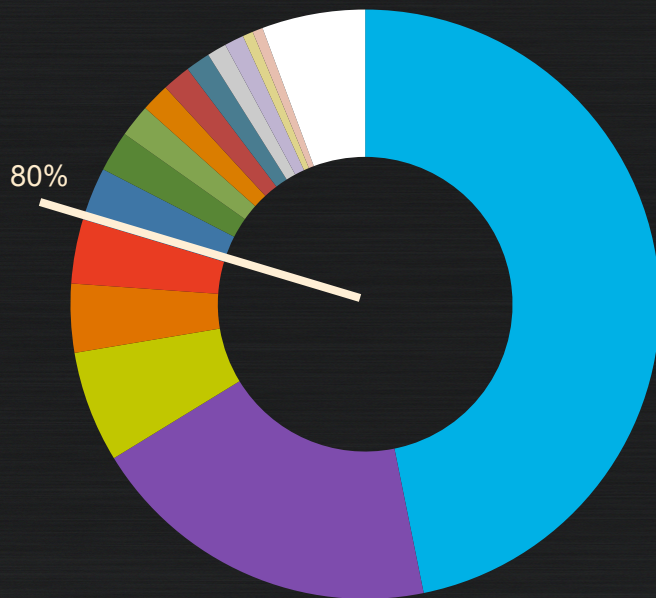
Others:

Fujitsu
Invisible Things Lab
BitDefender
Huawei
Zentific
Verizon
Cavium
GlobalLogic
NSA
...

2016: Hypervisor Stack Top Players

Top:

Citrix	47%
Suse	19%
Oracle	6%
ARM	4%
Red Hat	4%
Linaro	3%
Intel	2%
Star Lab	2%
FreeBSD	2%
Fujitsu	2%
BitDefender	1%
Linux Foundation	1%
NetBSD	1%
NSA	1%
Zentific	1%
Other	6%



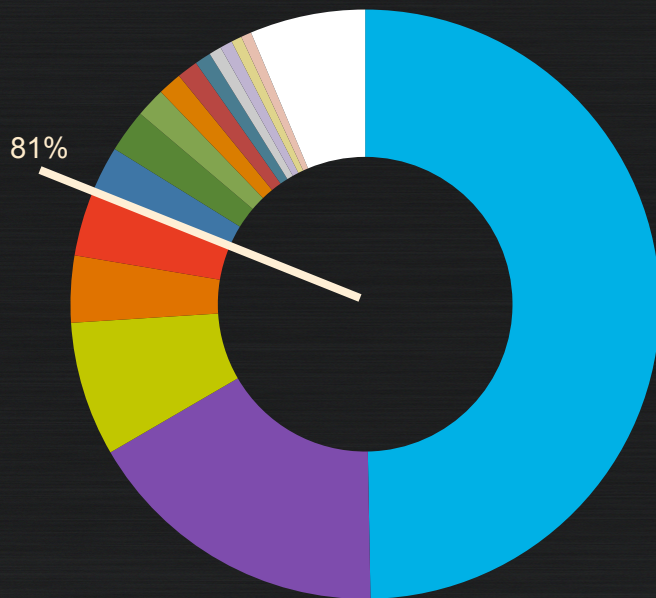
First-time contributors in 2016:

AIS
ARM
Aporeto
Bosch Car Multimedia GmbH
EPAM
Netflix
NXP

2017 H1: Hypervisor Stack Top Players

Top:

Citrix	50%
Suse	17%
ARM	7%
Oracle	4%
Intel	4%
Red Hat	3%
Aporeto	2%
Linux Foundation	2%
NetBSD	1%
FreeBSD	1%
Nokia	1%
Fujitsu	1%
Invisible Things Lab	1%
BitDefender	1%
EPAM	1%
Other	6%



Others:

Amazon
AMD
Linaro
Marvell
Huawei
Xilinx
Zentific
Star Lab
Cavium Networks
Gandi.NET
...



Contribution Volume Increased
Stalling as of 2017 → A problem?

Diversity Increasing
Changes in vendors make-up
But there is volatility
(new products, start-ups)

Code Reviews

An emerging problem area



Code Reviewers: Observations

5 people do more than 55% of all code reviews

Jan Beulich (Suse), Andrew Cooper (Citrix), Stefano Stabellini (Aporeto), Julien Grall (ARM), Wei Liu (Citrix)

The next 15 people about 28%, the rest only 17%

In 2015: 45%, 31%, 24%

This is not sustainable

Unless we fix this and newcomers and regular contributors with longer-term roadmaps step up, contribution growth will be limited

→ It will take longer for contributions to go into a release

In fact this appears to be happening already

Specific bottlenecks (anecdotally): Core x86 and ARM functionality

Top 10 Reviewers per release

Xen 4.6

Developer ↕ Q	Total Comments
ian.campbell@citrix.com	2,118
JBeulich@suse.com	1,845
andrew.cooper3@citrix.com	1,120
wei.liu2@citrix.com	866
lan.Jackson@eu.citrix.com	722
julien.grall@citrix.com	616
stefano.stabellini@eu.citrix.com	472
konrad.wilk@oracle.com	470
julien.grall@linaro.org	433
tiejun.chen@intel.com	330

Xen 4.7

Developer ↕ Q	Total Comments
JBeulich@suse.com	1,901
andrew.cooper3@citrix.com	974
ian.campbell@citrix.com	830
wei.liu2@citrix.com	823
konrad.wilk@oracle.com	798
lan.Jackson@eu.citrix.com	525
stefano.stabellini@eu.citrix.com	436
cardoe@cardoe.com	378
jgross@suse.com	330
george.dunlap@citrix.com	316

Xen 4.8

Developer ↕ Q	Total Comments
JBeulich@suse.com	1,310
andrew.cooper3@citrix.com	651
julien.grall@arm.com	644
wei.liu2@citrix.com	643
konrad.wilk@oracle.com	378
sstabellini@kernel.org	271
boris.ostrovsky@oracle.com	269
ian.jackson@eu.citrix.com	204
george.dunlap@citrix.com	199
jgross@suse.com	159

Xen 4.9

Developer ↕ Q	Total Comments
JBeulich@suse.com	1,806
andrew.cooper3@citrix.com	945
sstabellini@kernel.org	803
julien.grall@arm.com	670
wei.liu2@citrix.com	616
boris.ostrovsky@oracle.com	335
jgross@suse.com	257
ian.jackson@eu.citrix.com	248
konrad.wilk@oracle.com	210
Paul.Durrant@citrix.com	187

Community relies on top 4 contributing companies (+Aporeto) for code reviews

The impact of Security Vulnerability management on code review throughput



2017: Top Open Source Risks

74% Unknown Quality of Components

71% **Security issues in public facing applications**

→ High profile vulnerabilities

→ More companies looking for and finding vulnerabilities

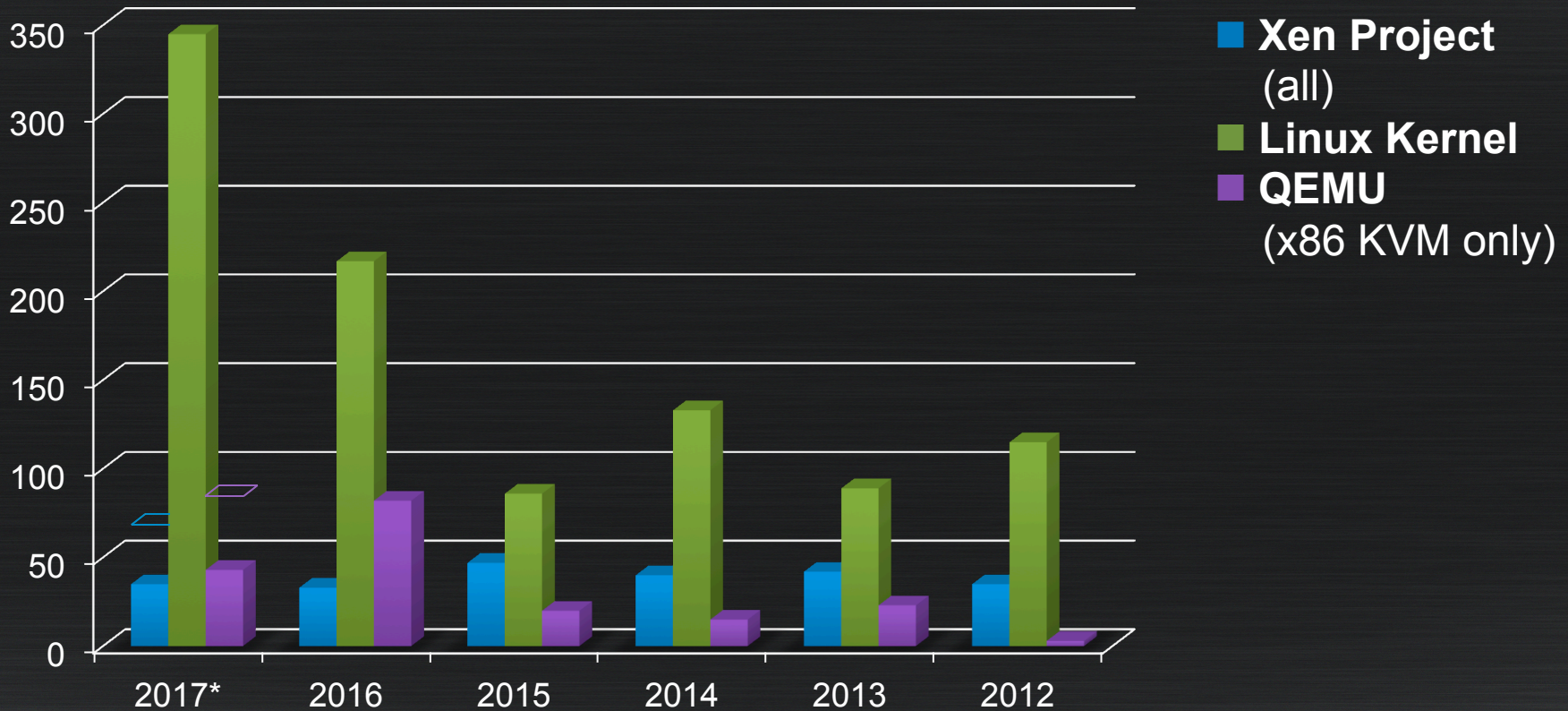
66% IP Concerns

64% **Exposure of internal systems to security issues**

→ High profile vulnerabilities

→ More companies looking for and finding vulnerabilities

CVE's discovered



*) Data up to June 31st, 2017 - Xen includes XSAs without CVE numbers

Vulnerability data from cvedetails.com

Impact

The number and complexity of issues has been increasing

More time spent handling security issues

Security issues have to be handled immediately

Time spent handling security issues at critical times during release cycle

Top code reviewers are also security team members

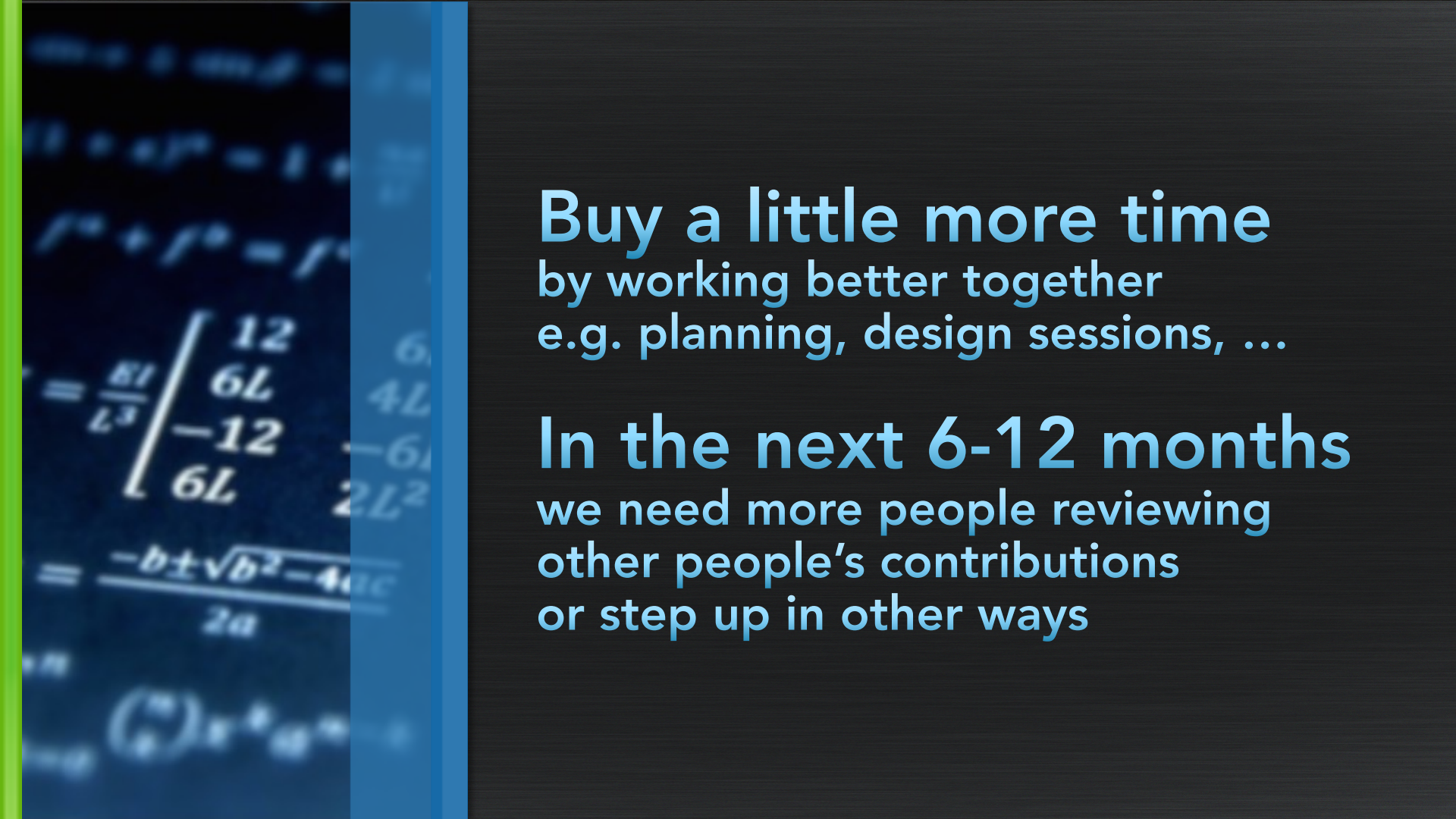
Exacerbates bottlenecks we already have

In particular for new x86 code

Extra work

Dealing with media impact, etc.

Develop tooling for better testing, release checking, ...



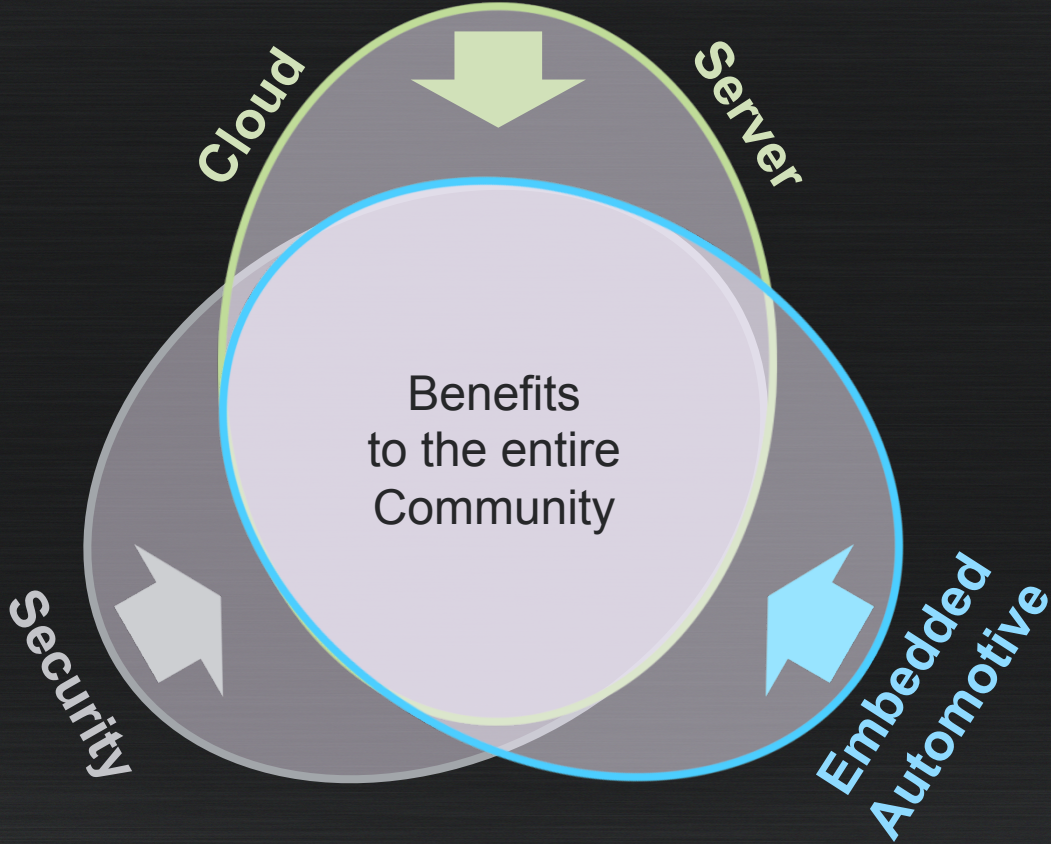
Buy a little more time
by working better together
e.g. planning, design sessions, ...

In the next 6-12 months
we need more people reviewing
other people's contributions
or step up in other ways

The 3 pillars of the project



Increasing alignment of Needs



SOFTLAYER
an IBM Company

ORACLE
CLOUD



Amazon Lightsail

CITRIX

SUSE

amazon
web services™

Tencent 腾讯

rackspace
the open cloud company

HUAWEI

ORACLE

Alibaba Cloud
aliyun.com

XZD
XENZYNO
DISTRIBUTION

Benefits
to the entire
Community

NXP



Bitdefender

ais

epam Xenbedded

GlobalLogic®



Br Bromium

DORNERWORKS

BAE SYSTEMS

OpenXT™

QUBES OS
A REASONABLY SECURE OPERATING SYSTEM

CRUCIBLE

BAE SYSTEMS

ais

XILINX

galois

Design Summit
mechanics

2018 in China
alongside LinuxCon



Mechanics: Design Sessions

*Attendees wanted less parallel sessions and more interactivity
So we merged the Hackathon and the Summit*



Mechanics: Design Sessions

Filter: Interactive Design & Problem Solving Session



Discuss
bar @ 15:20
George D

Discuss
foo @ 14:30
Lars K

Propose new sessions

For the day only (pick a timeslot + room)

Find me before the scheduling session

SCHEDULING Session

Each session host has 1" to pitch their session in order of schedule. In the session we will balance the schedule.

Lars updates live schedule immediately

Important:

Nominate note-taker & post to xen-devel@



Questions