KVM Status Update

Oliver Upton
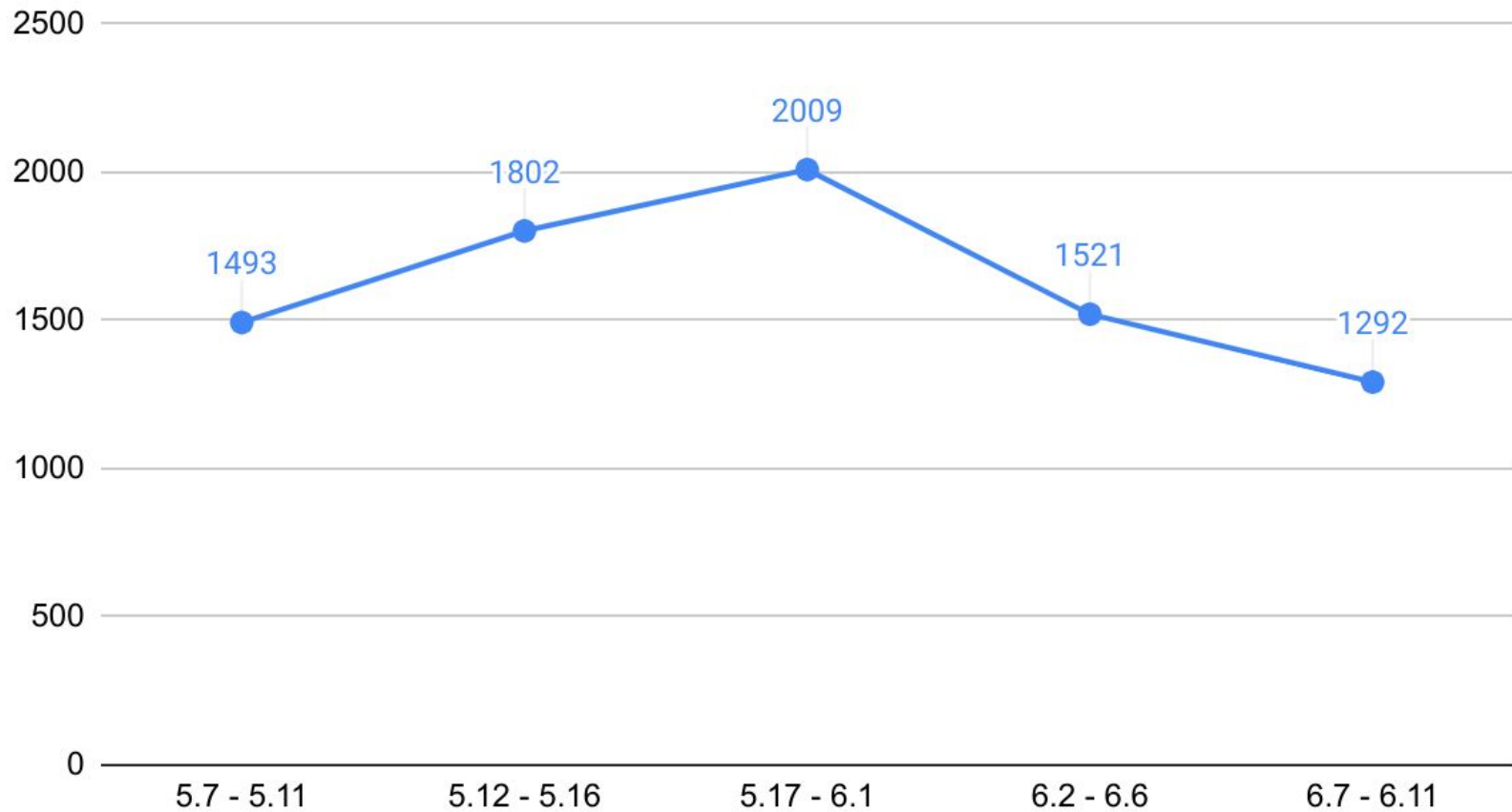
Welcome!

Statistics
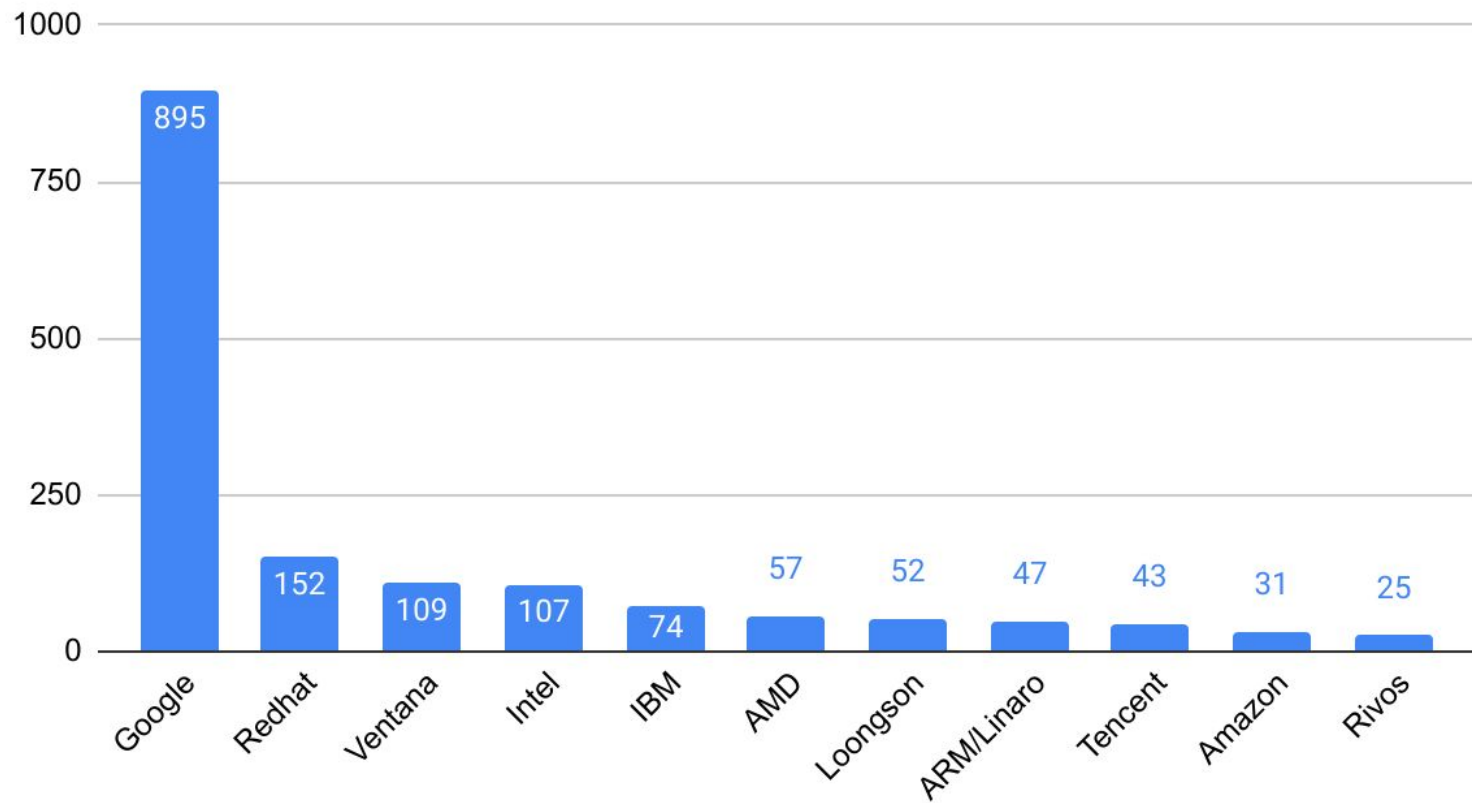
A Year(ish) in Review

- When we last met: 6.4-rc*
- Now: 6.11, 6.12 merge window
- ~1700 commits
  - 90 cc'd to stable
  - ~20% selftests changes

Contributions over time

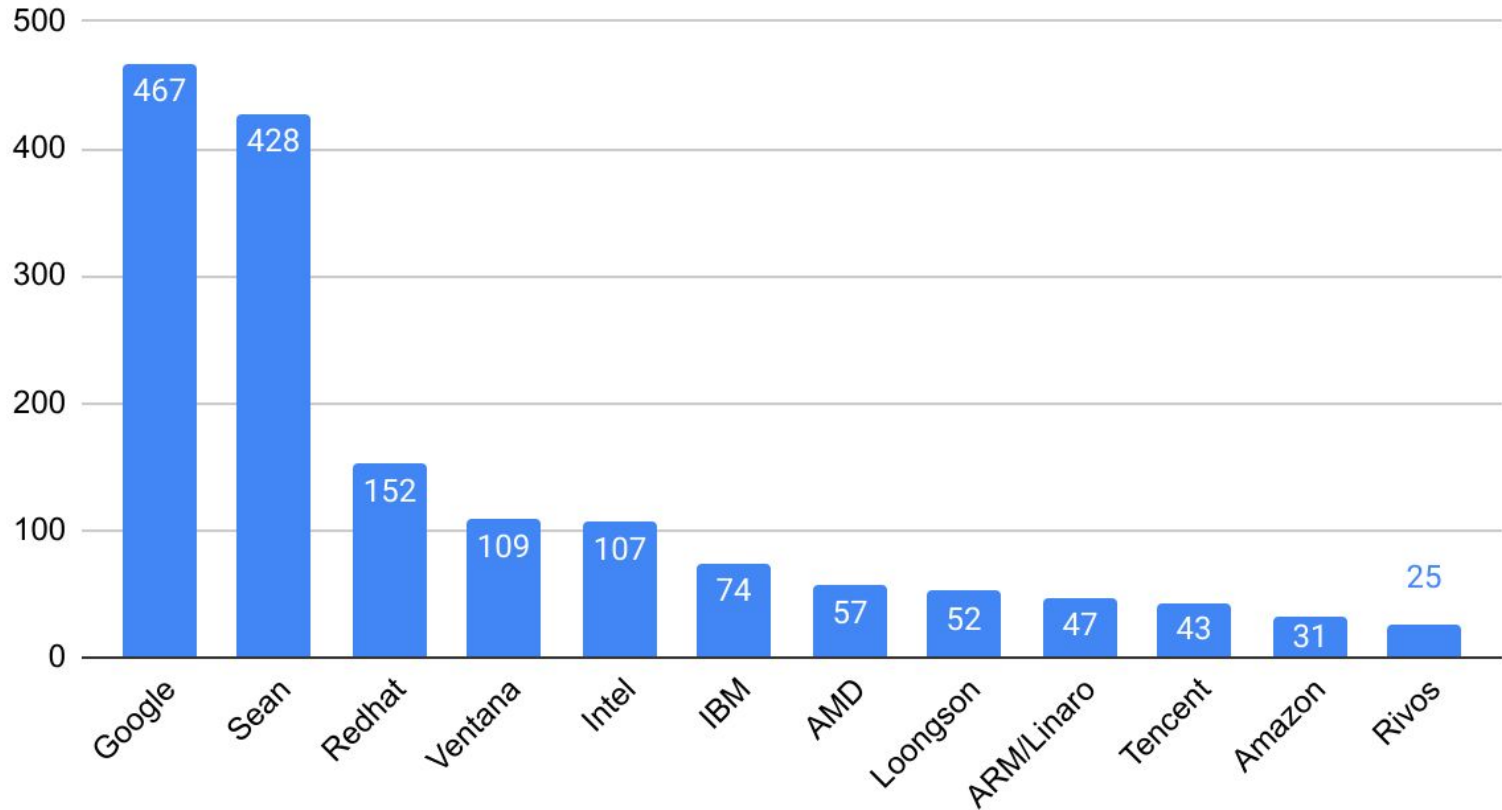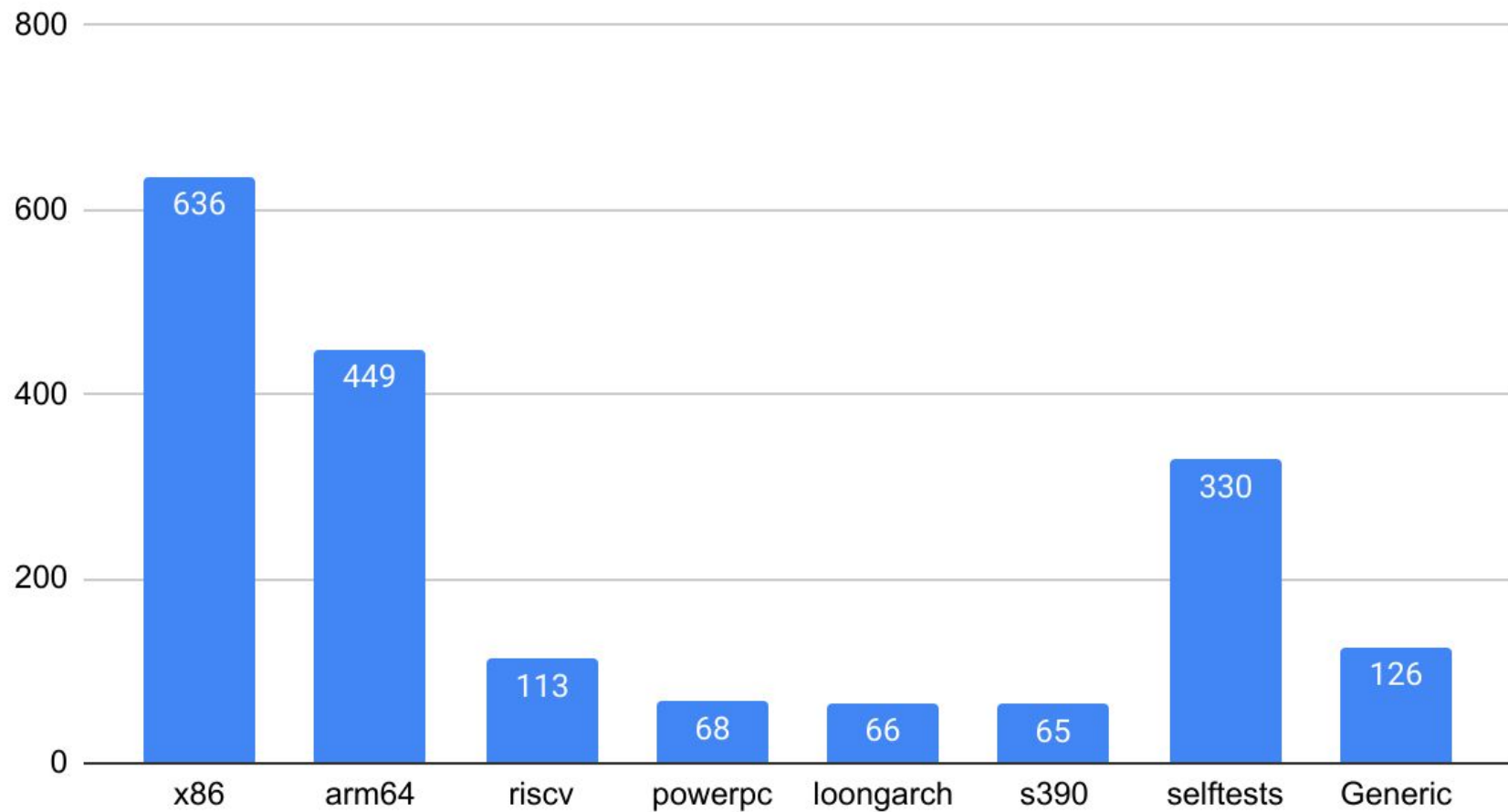# Contributions by Employer

Employer	Contributions
Google	895
Redhat	152
Ventana	109
Intel	107
IBM	74
AMD	57
Loongson	52
ARM/Linaro	47
Tencent	43
Amazon	31
Rivos	25

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Contributions by area

What's new

Generic

- guest_memfd (!)
- FD-backed memslots
- Memory attributes
- Fixlets + cleanups

arm64

- Even more nested code (traps, shadow MMU, CPU features)
- Configuration of CPU feature set via ID registers
- Normal-NC mappings for VFIO
- Host FF-A support in protected mode
- Performance improvements
  - MMU: Eager page splitting, TLBIRANGE
  - VGIC SGI and LPI routing

x86

- Virtualizing new CPU features
- SEV-SNP support
- UAPI improvements for SEV/SEV-ES
- CPUID for max mappable GPA
- ioctl for pre-faulting secondary MMU
- A few hardware bugs

RISC-V

- CPU features
- AIA irqchip
- New virtual SBI features, eg.
  - Stolen time
  - Debug console
  - PMU snapshot, overflow

Rest of the gang

Loongarch

- Architecture support
- PV IPI, steal time

powerpc

- 'NestedV2' ABI
- Bugfixes

s390

- PV crypto
- Secret UVCs

What's next

What's next

- Better support for non-refcounted pages
- More features based on guest_memfd
  - mmap()
  - Hugepages
  - Unmapping from kernel
  - Test for poisoning
- Still interest in arch-independent MMU work?

What's next

- "Passthrough" vPMU
  - perf/KVM interface across arches
- More TDX work
- Nested virtualization on arm64
- More pKVM upstreaming?

Closing

KVM Forum

- Grown a bit from last year!
- Back in Brno
- There's a social event :)
- Feedback for 2025

Sponsors

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Organizers

Local team:

- Jaroslav Suchanek
- Pavel Hrdina

SFC:

- Rosanne DiMesio

Thanks!