

# XenSummit

A panoramic view of the San Diego skyline, featuring numerous high-rise buildings of various architectural styles, including modern glass skyscrapers and older concrete structures. The sky is clear and blue, and the foreground shows a body of water reflecting the city.

## Planning for Xen 4.3

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August 27-28, 2012  
San Diego, CA, USA

# Adding structure to the release process

- 4.2 “Release coordinator”: Ian Campbell
  - Tracking blocking features and bugs
- Citrix xen.org team: tracking improvements
- 4.3 Release coordinator: George Dunlap
  - Tracking features and improvements
  - Guiding community discussions
- Ultimately community decided

# Xen 4.3: When?

- Time-based or feature-based?
- Xen 4.2
  - 4.1 released March 25 2011
  - 17 months
  - Development → Release → Distros
- Xen 4.3: Aiming for 9 months
  - June 2013 release
  - 6 weeks of RCs, 6 weeks of polishing
  - March 2013 feature freeze

# Tracking features

- Big reason for delay: libxl stable interface
  - No one realized how much more work there was!
- Looking ahead: What can we finish by 4.3?
  - Lots!

# Group: Feature Parity

- Upstream feature parity
  - Blktap3
  - Default to qemu-upstream
- Qemu stubdomain / dom0 parity
  - PV audio

# Blktap3: blktap for pvops

- Blktap2: Enable user-space interposition on block device
  - QCOW
  - VHD
  - Snapshotting
- Not upstreamable (DKMS packages avail)
- Blktap3: Fully user-space

# Group: Scalability

- Ram limit (16 TiB)
- Raising event-channel limits

# Event channel scalability

- Event pending, 2-level bit array
  - 32-bit: 1024
  - 64-bit: 4096
- Each PV service requires 1 event channel
  - Disk, net, console, xenstore = 4
  - 32-bit: max 256 guests



# Group: Performance

- NUMA
  - Real NUMA affinity
  - Guest memory migration
  - Virtual NUMA topology
- PVH – PV with HVM extensions
- Persistent grants
- Multi-page blk, net rings

# PVH: PV + HVM

- PV developed before HVM, HAP available
- Issues
  - Ugly hooks in Linux
  - PT-heavy operations still slow
  - 64-bit system calls
- PVH: Use HVM extensions to remove MMU pvops

# The Virtualization Spectrum

- Disk/network?
- Interrupts / timers?
- Emulated motherboard, BIOS?
- Legacy boot?
- Privileged instructions?
- Pagetables (pvops MMU)?

# Group: New Technologies

- ARM servers
- Openvswitch integration
- EFI: Signed xen image from build

# xl improvements

- vm import/export
- USB pass-through
- Backend driver script rationalization

# Group: New features

- Nested virtualization
  - Win\* “WinXP compatibility mode”
- Full-VM snapshotting / cloning
- Storage migration

# Getting feedback

- How do developers know what users want?
- [Uservoice.com](http://uservoice.com)
  - Suggest improvements
  - Vote on which ones are the most important
- <http://xenorg.uservoice.com>

# Conclusion and Questions

- Release cycle
  - March 2013 feature freeze
  - June 2013 release
- Lots of great features!
- [xenorg.uservoice.com](http://xenorg.uservoice.com)