Welcome to the Xen Summit
September 7th-8th, 2006
# Schedule

<table>
<thead>
<tr>
<th>Day/Time</th>
<th>Track A</th>
<th>Track B</th>
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<tbody>
<tr>
<td>Thurs 08.30-09.00</td>
<td>Session 1 Intro/plenary (C)</td>
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<tr>
<td>Thurs 09.00-10.30</td>
<td>Session 2A Xen Core</td>
<td>Session 2B Security #1</td>
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<td>Chair: Keir Fraser</td>
<td>Chair: Steve Hand</td>
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<tr>
<td>Thurs 11.00-12.30</td>
<td>Session 3A HVM Core</td>
<td>Session 3B Security #2</td>
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<td>Chair: Ian Pratt</td>
<td>Chair: Reiner Salier</td>
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<tr>
<td>Thurs 13.30-15.00</td>
<td>Session 4A Non x86</td>
<td>Session 4B Performance</td>
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<td>Chair: Alex Williamson</td>
<td>Chair: Ian Pratt</td>
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<tr>
<td>Thurs 15.30-17.00</td>
<td>Session 5A Testing</td>
<td>Session 5B HVM Devices</td>
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<td>Chair: James Bulpin</td>
<td>Chair: Christian Limpach</td>
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<tr>
<td>Thurs 18.30-+</td>
<td>Dinner and Billiards</td>
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## Schedule

<table>
<thead>
<tr>
<th>Day/Time</th>
<th>Main Topic</th>
<th>Chair</th>
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<tbody>
<tr>
<td>Fri 09.00-10.30</td>
<td>Session 6A Virtual Devices</td>
<td>Session 6B OS Ports OS Ports</td>
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<td>Chair: Andy Warfield</td>
<td>Chair: Chris Wright</td>
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<td>Fri 11.00-12.30</td>
<td>Session 7A Smart IO H/W #1</td>
<td>Session 7B Control Stack #1</td>
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<td>Chair: Ian Pratt</td>
<td>Chair: Ewan Mellor</td>
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<tr>
<td>Fri 13.30-15.00</td>
<td>Session 8A Smart IO H/W #2</td>
<td>Session 8B Control Stack #2</td>
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<td>Chair: Steve Hand</td>
<td>Chair: Jim Fehlig</td>
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<tr>
<td>Fri 15.30-16.30</td>
<td>Session 9 Closing/plenary (C)</td>
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Mini Summit Agenda

- Facts and figures
- Roadmap presentation/discussion
- Linux upstream merge status (Chris / Keir / Rusty)
- ia64/power status (Alex Williams / Hollis)
- Xen API / xm extensions proposal (Ewan)
- HVM IO development (Jun / Leendert)
- File-based disk images: blktap/qcow (Andrew)
- Misc: Kexec, bootloaders, GSO
Xen 3-unstable Change Log

Xen 2.0.0 to 3.0.0 #csets per week (excl. merges)
Post-3.0.0 Change Log

Post 3.0.0 #csets per week (excl. merges)

3.0.1
3.0.2
### Post-3.0.0 Rough Code Stats

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Stats since 3.0.0 Release
Post-3.0 Development Model

- Stabilize “unstable” tree every 8-12 weeks
  - Sweep unstable into 3.0-testing
  - Release as 3.0.1, 3.0.2 etc

- Bug fixes cherry picked into 3.0-testing until next release
  - After being in unstable for a few days, requests to push into 3.0-testing
  - Release as 3.0.x-y etc.
  - (much like Linux)
Achievements: 3.0.1/3.0.2

- AMDV support, generic ‘HVM’ layer
- Linux 2.6.16 upgrade in –unstable
  - subarch of i386/x86_64
  - Linux tip maintained in linux-2.6.tip-xen.hg
- Progress on linux patch upstreaming
  - Patch queue in linux-2.6-patchqueue.hg
- PCI pass-through is back
- Bug fixes, stabilization for SLES10
3.0.3 Release

Planned for before OLS, postponed to synchronize with FC6 freeze and drive more features:

- New CPU scheduler with CPU migration
- Blktap/qcow for file-backed virtual disks
- Upgrade qemu for HVM IO (usb, vnc)
- New shadow pagetable code
- PV extensions to HVM guests (net, block IO)
- PV framebuffer support
- NUMA memory allocator support
- Dom0 kexec/kdump support
- Xend life-cycle management
- Full Segmentation Offload in netfront/back
- Power architecture merge
3.0.4 Release

- Early Q4 2006 (October)
  - (leftovers from above)
  - Xen control API
  - XML config files, extended ‘xm’ syntax
  - QEMU ‘v2e’ integration
  - Performance optimizations

- Should we call this release 3.1?
Performance

- Performance and scalability work
  - Time is right for some close attention
  - 1-4 socket systems the priority
  - Optimizations for bigger systems must not hurt smaller ones (they often help)
    - Onus is on submitter to demonstrate
    - (Patches that clearly hurt larger systems should be rejected too)

- Good performance tools now available
  - s/w perf counters, xen oprofile, tracebuf etc
API stability

- Guest API stability (hypercall, IO)
  - Backward guaranteed:
    - Old 3.0 guests must run on new xen
  - Need to add forward compatibility as well
    - Important now SLES10 hypervisor in the wild
    - [Linux upstreaming may force API change]

- Privileged domain hypercall API
  - Over time, stabilise dom0 priv domain API
  - Still in flux through 2006

- Xen API control protocol and CLI syntax
  - Finalize wire format, create bindings
Tools (xm/xend/CIM)

- VM life-cycle management
- XML config file format adoption
  - xm syntax changes
- Xen control API
  - C/C++/perl/python bindings
  - Platform for CIM providers
  - https/unixdomain sockets/ssh transport
- Guest coredump support
- Guest bootloader support
HVM Support

- Further shadow pagetable optimizations
- Allow PV hypercalls from HVM guests
- HVM save/restore support; live relo
- Initial SMP guest support; ACPI support
- Superpage PTE support
- Enhanced device emulation
  - Move emulator to stub domain
  - Change interface to hypervisor (“V2E”)
  - Better device models
Core Xen

- Live relo on PAE/x86_64; tuning
- Support for 32b PAE PV guests on 64b xen
- NUMA allocation/policy
- Scheduler tuning
- Remove artificial x86_64 heap sz restriction
- Superpage support
- Scheduler tuning, partic. for SMP guests
- Power management
Linux

- Extensive benchmarking and tuning
- x86_64 optimizations
- PV framebuffer (plus X extensions)
- Avoid balloon driver ‘crunch’ issues
- SMP scalability improvements
- USB virtualization
- OpenGL virtualization (Chromium)
Storage

- Support for file-based virtual disk storage
  - blktap/ublkback
  - dm-userspace

- Adopt qcow as favoured xen disk format
  - Compatible optimizations vs. v2 format

- Block IO QoS via ionice and/or blkback

- Media change, resize events

- SCSI-level front/back (tape, CD writer)
Network

- Segmentation Offload support
- Cleanup up checksum offload
- Copy vs. page-flip tuning
- Streamline linux bridge code
- TOE/RDMA support
- Point-to-point inter-VM NIC support
Misc

- Dom0 kexec/kdump support
- Bootloader support
- xenfs filesystem virtualization