

Xen/ia64 Status Update

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Xen/ia64 Status

- “Xen/ia64 is a first-class Xen port” – Ian Pratt
 - PV (paravirtual) and HVM (fully virtual) domains
 - PV domain save/restore/migrate
 - HVM domain save/restore
 - PV-on-HVM drivers
 - Driver domains
- Xen/ia64 supported in RHEL5.1
- Multi-vendor platform support
 - Bull, Fujitsu, HP, Intel

Xen/ia64 Guests

- Paravirtualized
 - Linux
 - mini-os based on FreeBSD
 - BS2000
- Fully virtualized
 - Linux
 - Windows 2003 for Itanium
 - OpenVMS WIP

Xen/ia64 Accomplishments (1)

- machine vector support
 - struct of function pointers to take advantage of platform features
 - previously built PV kernel for DIG reference platform
- paravirtualized iommu support
 - DIG implements only a swiotlb
 - machine vector lets us take advantage of a hardware iommu

Xen/ia64 Accomplishments (2)

- gate page optimization
 - fast syscalls on Linux
 - called `is_running_on_xen()` for transparent paravirtualization
 - macros to build gate page twice, insert the right one on boot
 - eliminate the transparent paravirtualization penalty from the syscall path

Xen/ia64 Accomplishments (3)

- memory map flexibility
- HVM domain save/restore
- domain debugger
- NVRAM for HVM domU
- big endian application support
- open source GFW
 - SMP, Windows 2003 for Itanium, newer upstream kernels, smbios table

Xen/ia64 Accomplishments (4)

- support for >63 GB guest domains
- kexec/kdump
- performance tuning
 - fast reflections to big-endian domains
 - fast fault-handling in Windows
 - configurable VHPT size

Xen/ia64 Future Work (1)

- HVM domain migration
- HVM domain ballooning
- support for additional HVM guest OS
- eepr100 QEMU driver
- better NUMA support
- VT-d support

Xen/ia64 Future Work (2)

- Windows VGA modes with open source GFW
- GFW serial console support
- increase Xenheap
- increase Xen page size
- superpage/hugetlbfs support
- remove hard limit of 63 domains

Xen/ia64 Future Work (3)

- virtualized processor modules
- VMM debugging tools
- fast hypercall via gate page
- PMU virtualization
- merge with upstream Linux

Xen/ia64 Pointers

- Roadmap
 - <http://wiki.xensource.com/xenwiki/XenIA64/Roadmap>
- Development branch
 - <http://xenbits.xensource.com/ext/ia64/xen-unstable.hg>
 - <http://xenbits.xensource.com/ext/ia64/linux-2.6.18-xen.hg>
 - maintainer: Alex Williamson <alex.williamson@hp.com>
- Mailing list
 - <http://lists.xensource.com/cgi-bin/mailman/listinfo/xen-ia64-devel>
- BOF to discuss progress, issues, roadmap
 - after sessions today