AMD's virtualization technology SVM

Xen Summit
Elsie Wahlig

January 17, 2006

SVM, The Past

- Formerly codenamed “Pacifica”
- Specification published
- SimNow simulator published
- HVM abstraction layer
- AMD port published for Xen’s Full Virtualization infrastructure

SVM, Present and Future

- ✓ 32-bit Development complete
  - http://xenbits.xensource.com/ext/xen-unstable-hvm.hg
- ❑ 64-bit port
- ❑ Device Exclusion Vector (DEV)
- ❑ Secure Initialization (SKINIT)
- ❑ Nested Paging
- ❑ Performance & Paravirtual drivers
- ✓ Posted patch: GART as minimal IOMMU for Xen's Para-virtualization

Hardware Virtual Machine

- One management and user interface for Fully Virtualized Machines
- HVM=common layer + an interface to architecture specific components
- Very similar hardware technology with some functional differences
- Analysis based on specification and code inspection
  - Instruction names
  - Opcodes
  - VMCB and VMCS
  - Exit handling
  - AMD Paged Real Mode

Resources

- Updated AMD64 Architecture Tech Docs
  - PID 24593 and PID 24594

http://www.amd.com/us-en/Processors/DevelopWithAMD/0,,30_2252_739_7044,00.html

- Xenbits HVM tree

http://xenbits.xensource.com/ext/xen-unstable-hvm.hg

- SimNow

http://developer.amd.com/simnow.aspx

Contacts

- Elsie Wahlig
- Rich Brunner
- Geoffrey Strongin
- Steve McDowell

Trademark Attribution