bhyve
status report

grehan@freebsd.org
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The last 12 months...

• Guest support
• H/w support
• Performance
• Features
Mo’ guests

- BSD
  - OpenBSD >= 5.1; NetBSD/amd64 >= 6.0
- Older guests (32 & 64-bit)
  - Centos/RHEL >= 4.8 through 7.1
  - Ubuntu >= 10.0 up to 15.04
- Continually test Linux-latest
H/w - CPU support

- Ivy Bridge Xeon
- Virtual APIC page
- Posted interrupts
H/w - CPU supp-2

- AMD SVM
  - In CURRENT since 10/2014
  - MFCd to 10-stable; will be in 10.2
  - Tested with Opteron/Phenom/Kaveri
H/w - PCI passthru

• PCI SRIOV support committed
  • Intel 10/40G adapters (ixgbe/ix)

• FreeBSD device control
  • Allows dynamic pass thru attach/detach
Performance - timers

- Timer emulations moved to in-kernel
  - 8254, RTC, PM-timer
    - (local APIC & HPET already there)
- Fixes drift/jitter issues
- No more boot-time o/s timer vs timer cal issues
- Allows true UTC time, not just host time
Performance - scaling

- Have run guests with 20 vCPUS, 120G
  - (dual-socket Ivy Bridge v3)
- Unlimited (almost) numbers of device emulations
Code in transit

- Intel e1000 (82545EM)
- XHCI controller
  - USB mouse target
- AT keyboard
- Winbond watchdog timer
- Module infrastructure
Windows

- Nothing running as of yet
- Still ramping up on a most unfamiliar tech
- UEFI a requirement…
UEFI

• Been running for a long time
  • Pluribus Networks using in production
• But:
  • OVMF target becoming more qemu-specific
  • Intel release Minnowboard under 2-clause BSD
  • Will use that as a template
• Lots of work remaining
Thanks

Questions ?