

FreeBSD VirtIO

FreeBSD 2012 Devsummit

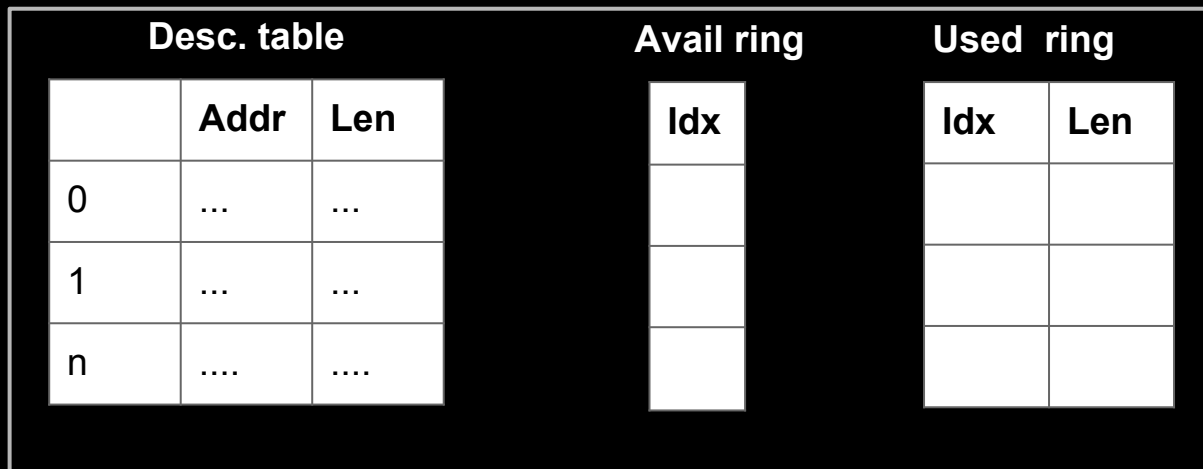
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FreeBSD VirtIO

- What is VirtIO?
- Driver status
- WIP
- Future plans

What is VirtIO?

- API for IO devices in a paravirtualized environment
 - Host - QEMU/Vhost, Virtualbox, BHyVe
 - Guest - Linux, Windows, Illumos, NetBSD, FreeBSD
- Configuration typically done via PCI
- IO via shared memory (virtqueue)



Driver status

- Network (if_vtnet)
 - Rx/Tx checksum, TSO, LRO*, MAC filtering
- Block (virtio_blk)
 - GEOM disk provider
- Balloon (virtio_balloon)
 - Inflate/deflate as requested by the host

Works in progress

- Virtqueue support for `EVENT_IDX`
 - Delay until next guest trap or next host interrupt
- VirtIO SCSI
 - SCSI HBA
 - Addresses issues with VirtIO block
 - Multiple devices per adapter
 - Passthrough

Future plans

- Replace taskqueues with ithreads
- Better if_vtnet
 - Per Rx/Tx locking
 - Sane checksumming
 - Multiqueue?
- Additional drivers
 - Console/serial
 - Entropy
 - MMIO
- Suspend/Resume
 - Migration
- BHyVe?