VirtIO Status

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Agenda

- What is VirtIO?
- Status
- WIP
- What's Left
What is VirtIO?

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

<table>
<thead>
<tr>
<th>Desc. table</th>
<th>Avail ring</th>
<th>Used ring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addr</td>
<td>Len</td>
<td>Idx</td>
</tr>
</tbody>
</table>
Status

- Most complete implementation outside of Linux
  - PCI, block, network, balloon, SCSI
  - Most features supported
WIP

- projects/virtio
  - Significant cleanup
  - Removed taskqueues with ithreads
  - Support for several minor features
- user/bryanv/vtnetmq
  - Multiqueue Rx/Tx
  - Improved checksum (IPv6)
What's Left

- Commit SVN branch work to HEAD
- Support remaining devices
  - MMIO, console
- Non-x86 archs
- Better stack support for checksum
  - VirtIO checksumming is done by offset/length
  - Local forwarding
- Unmapped IO?
- SCSI multiqueue?