

PCIe Endpoint Subsystem Open Items

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Open Items

- PCIe Endpoint Notifier (Notification from Endpoint Controller Driver to Endpoint Function Driver)
- Representing endpoint function device in device tree
- Standardization of producer-consumer queue using VirtIO for communication between PCIe Endpoint Function Driver and the Host side driver
- Using genalloc for outbound window memory allocation

Standardization of producer-consumer queue

VirtIO

- Governed by Standard Body (<http://docs.oasis-open.org/virtio/virtio/v1.0/virtio-v1.0.html>)
- Leverage applications written for other Use-Cases (virtualization, IPC: virtio-net, virtio-blk, rpmsg, etc.,).
- Time consuming and more initial investment to get to the standard
- <https://lpc.events/event/7/contributions/849/>

NTB (or Custom Transport)

- No Standard
- Write new applications for every use-case
- Rapid application development

Genalloc for outbound window memory allocation

- Endpoint subsystem uses custom memory allocation (pci-epc-mem.c)
- Linux has “The genalloc/genpool subsystem”
- Adapting pci-epc-mem to genalloc/genpool subsystem

- <https://www.kernel.org/doc/Documentation/devicetree/bindings/pci/pci-ep.yaml>
- Standard binding to specify outbound window
- pci-epc {
 memory {
 reg = <0x00000000 0x10000000 0x0 0x08000000>,
 <0x00000004 0x10000000 0x1 0x00000000>;
 }
}

- Unification of pci_epc_create() and pci_epc_mem_init()