PCIe Endpoint Subsystem Open Items

Kishon Vijay Abraham I (TI)
Manivannan Sadhasivam (Linaro)
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](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/](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

- Standard binding to specify outbound window
- `pci-epc { 
    memory {
        reg = <0x00000000 0x10000000 0x0 0x08000000>,
        <0x00000004 0x10000000 0x1 0x00000000>;
    }
}

- Unification of `pci_ehc_create()` and `pci_ehc_mem_init()`