



Service Cores

Harry van Haaren

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▶ **Problem**

- ▶ Goal

▶ **Solution**

- ▶ Example

▶ **Discussion**

- ▶ Ethdev, Cryptodev, Eventdev, ...
 - ▶ HW Available?
 - ▶ **No lcore required**
 - ▶ SW Functionality?
 - ▶ **Requires CPU cycles**

- ▶ Environments have **different lcore requirements**

- ▶ **Abstract Icore requirements**
 - ▶ No application code changes required
 - ▶ Regardless of
 - ▶ Platform or environment
 - ▶ HW / SW PMD

- ▶ Service
 - ▶ Runnable work item
 - ▶ Runs an **iteration of work** then returns
- ▶ Service Core
 - ▶ Dedicated lcore to running services
 - ▶ **Removed from app** coremask
 - ▶ Main loop in service library

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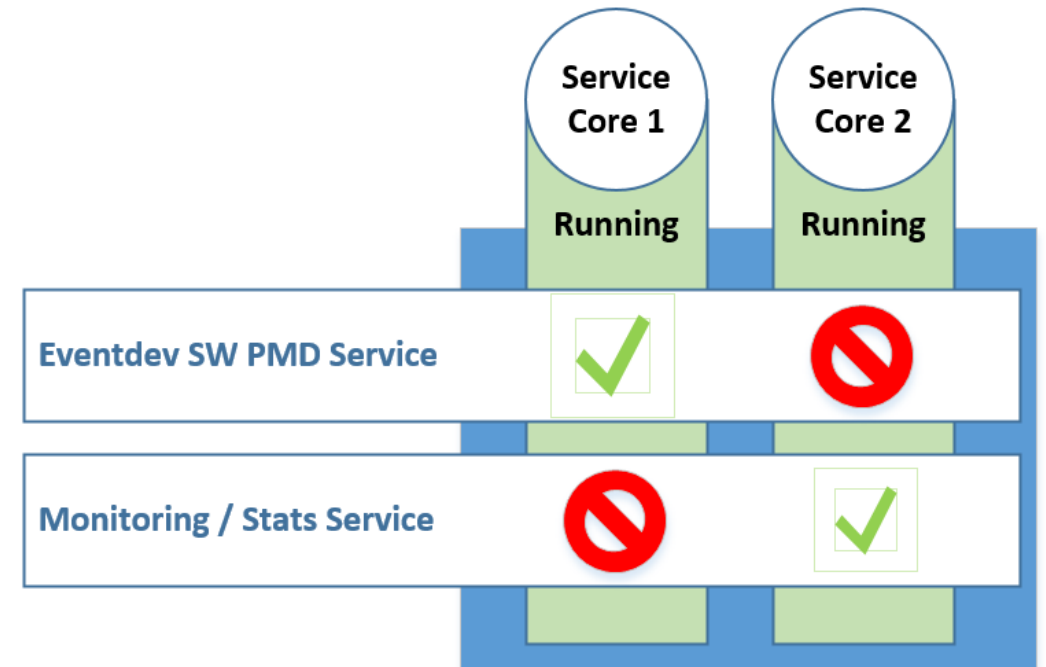
```
while(1) {  
  FOREACH_SERVICE()  
  service()  
}
```



Service Cores - Mapping



- ▶ Which service runs on what core?
 - ▶ Set by mapping
- ▶ Flexibility
 - ▶ Multiple services on one core
 - ▶ Multiple cores running one service
 - ▶ Multi-thread safe flag



- ▶ Start thinking ... Q & A!
- ▶ Eventdev SW PMD + Service Cores example
- ▶ Discussion

▶ Application

- ▶ Uses Eventdev SW PMD

- ▶ EAL args passed `./app --vdev event_sw0 -s 0x10`

 - ▶ Registers `event_sw0_service`

 - ▶ Service core init and mappings by EAL

- ▶ Application just uses DPDK
 - ▶ No application code changes
 - ▶ Possibly less lcores available in coremask
 - ▶ Depends on environment
- ▶ Not concerned with “**possibly-required**” functions
 - ▶ `rte_event_schedule()`
 - ▶ ...

- ▶ Initial merge 17.08
- ▶ API improvements 17.11
 - ▶ Recommending DPDK from Git
- ▶ Sample app
 - ▶ Application registered services
 - ▶ Advanced service API usage
 - ▶ <http://dpdk.org/dev/patchwork/patch/29169/>

!! Discussion !!

?? Questions ??

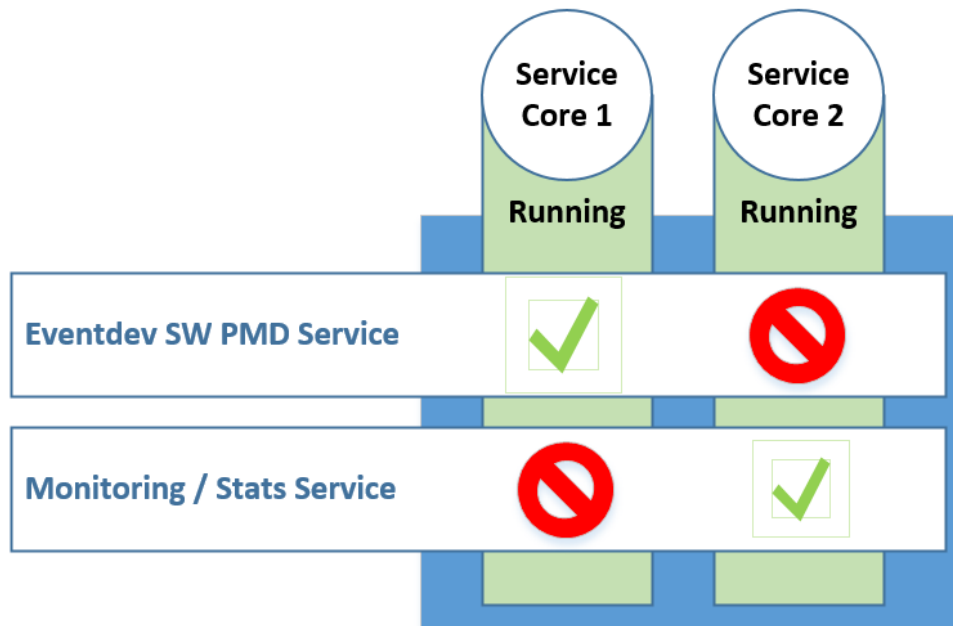
Harry van Haaren

harry.van.haaren@intel.com

Service Cores - Service Mappings



Performance



Scale-Down

