



Data Plane Device Management Library (DPDM)

Liang-Min Wang

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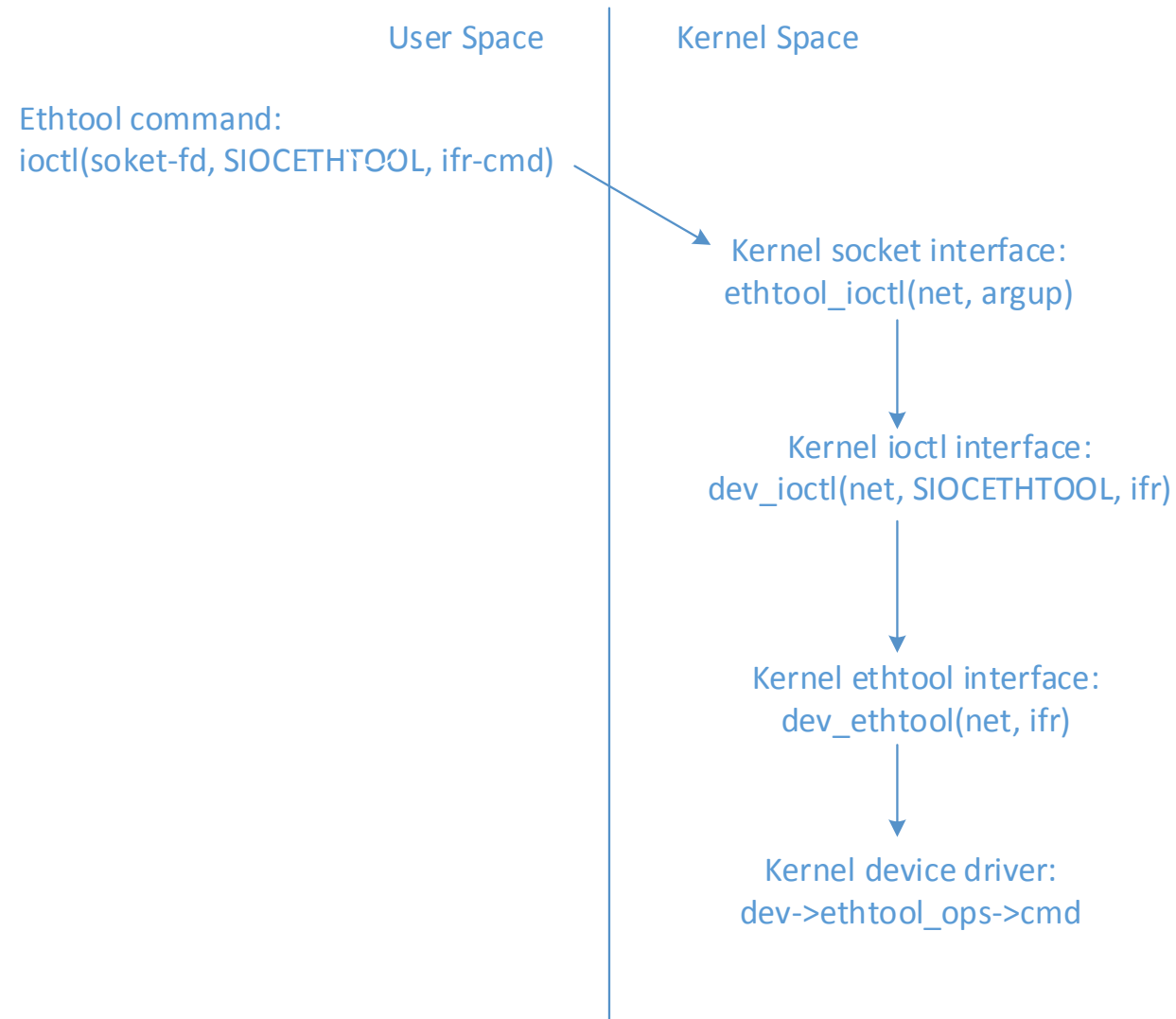
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- ▶ DPDM includes a set of user-space libraries and a kernel module.
- ▶ DPDM user-space libraries are data plane device management libraries designed and implemented based upon Intel-initiated Open Source project DPDK.
- ▶ DPDM is based upon a driver extension technology that enables DPDM to support additional device management functionalities that are not in the scope of DPDK.
- ▶ DPDM includes components to support both user-space and kernel-space device management interfaces. This has become critical for Telco* applications since more customers are requesting features to support managing devices over Network Functions Virtualization (NFV) and cloud environment.
- ▶ With DPDM, customers either can write a user-space daemon to invoke supported device features through Inter-Process Communications (IPC) or use existing network device management utilities (Ethool/IP/Ifconfig) to manage network device setup when devices are managed by DPDK driver.

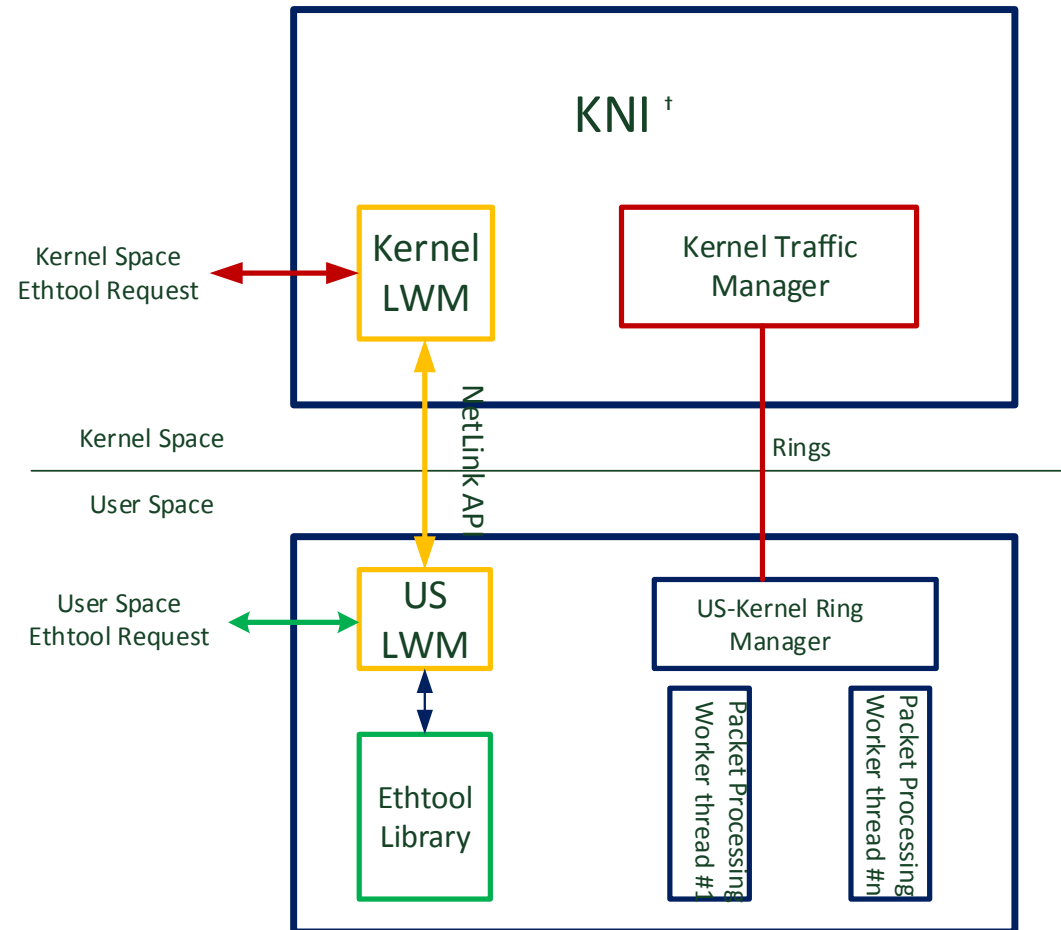
Ethtool and Kernel Driver



DPDK Ethtool Upstream Effort

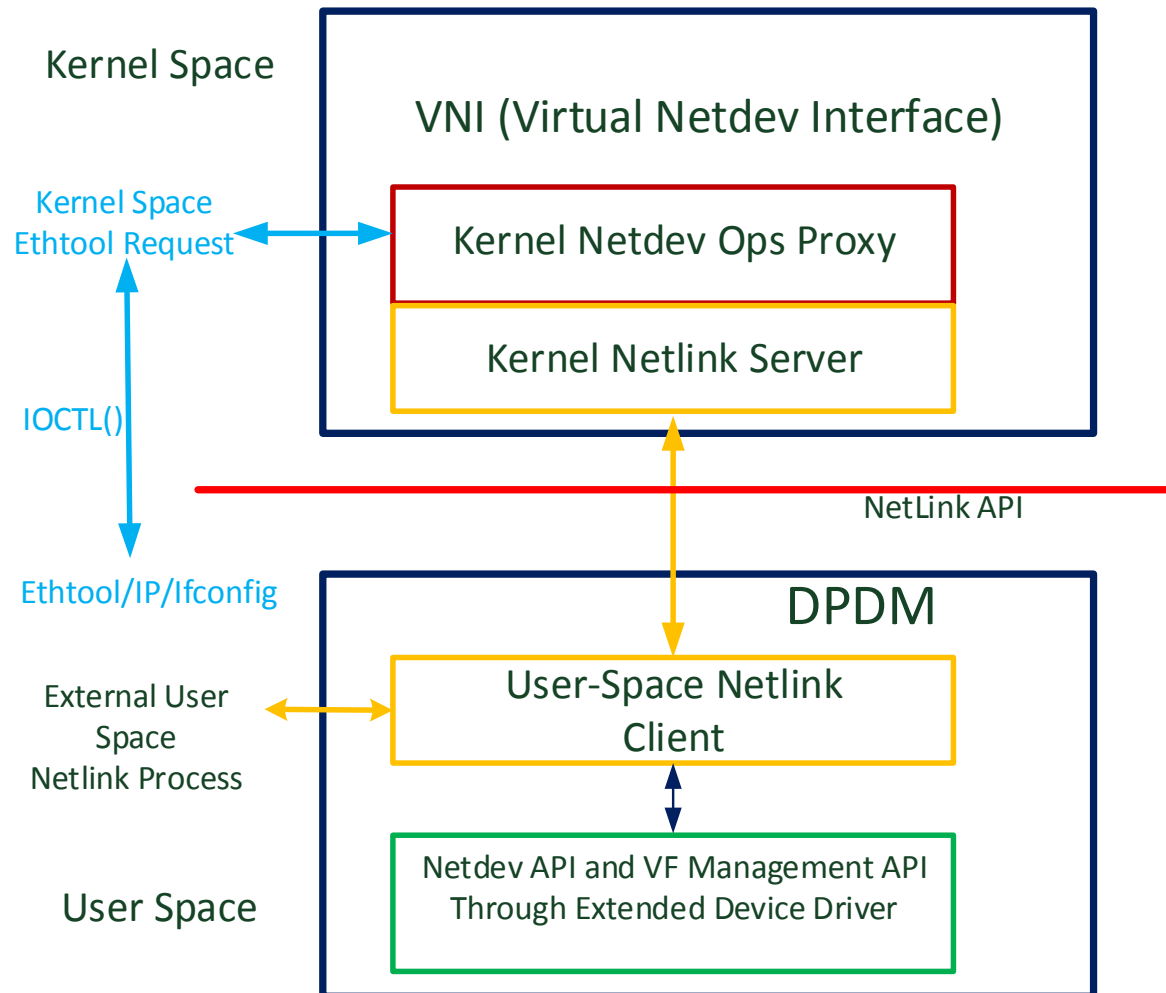


Hybrid Ethtool Library Implementation Model



KNI[†]: remove kernel-space ethtool library and add Kernel LWM

User Space Data Plane Device Management Architecture





- ▶ Extended Driver Registered Through GCC Constructor
 - ▶ Register extender driver before main entry
 - ▶ Link extended driver with base driver after `rte_eal_init()`
- ▶ Extended Device Structure
 - ▶ `struct rte_eth_dev_ex::dev_ethtool_ops, ::dev_netdev_ops`
 - ▶ `::netdev_data, ::vf_flags, ::vf_mask, ::is_vf`
- ▶ Run Time Driver Connection
 - ▶ `rte_dev_probe_extension(...)`
- ▶ ETH_DEV API Extension
 - ▶ `rte_ethtool_x` and `rte_netdev_x`
 - ▶ `rte_eth_get_devs_by_port(...)`



Questions?

Liang-Min Wang
liang-min.wang@intel.com