Introduction of Open Programmable Infrastructure (OPI) Project

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The Linux Foundation wants to make data processing units (DPUs) easier to deploy, with the launch of the Open Programmable Infrastructure (OPI) project this week.

The program has already garnered support from several leading chipmakers, systems builders, and software vendors - Nvidia, Intel, Marvell, F5, Keysight, Dell Tech, and Red Hat to name a few - and promises to build an open ecosystem of common software frameworks that can run on any DPU or smartNIC.

SmartNICs, DPUs, IPUs - whatever you prefer to call them - have been used in cloud and hyperscale datacenters for years now. The devices typically feature onboard networking in a PCIe card form factor and are designed to offload and accelerate I/O-intensive processes and virtualization functions that would otherwise consume valuable host CPU resources.

As organizations strive for digital transformation, they are in reality seeking to reinvent their business, modernize their processes and push the boundaries of existing IT infrastructure. To address that last point, we frequently see customers exploring alternatives to CPU-centric system architectures, where software running on a central CPU directly controls a set of HW
peripherals that offer static functions and/or acceleration capabilities. Supporting this trend is a new class of devices, evolved from SmartNICs but lacking cohesive standards even when it comes to naming - NVIDIA and Marvell call their offerings Data Processing Units (DPU) while Intel refers to their technologies as Intelligent Processing Units (IPUs).

- **Linux Foundation Announces Open Programmable Infrastructure Project to Drive Open Standards for New Class of Cloud Native Infrastructure - Linux Foundation** [5]

  Data Processing and Infrastructure Processing Units - DPU and IPU - are changing the way enterprises deploy and manage compute resources across their networks; OPI will nurture an ecosystem to enable easy adoption of these innovative technologies

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