

THE PROCESSOR AT THE HEART OF INTELLIGENT SYSTEMS



KALRAY UNVEILS SUPPORT OF NVME/TCP TO EASE AND ACCELERATE DATA CENTER STORAGE DISAGGREGATION

Industry-first flexible and cost-efficient storage solution supporting both NVMe-oF RoCE and NVMe/TCP standards for composable storage systems.

Grenoble – France, Santa Clara – USA, July 29, 2019 – Kalray (Euronext Growth Paris: ALKAL), pioneer in processors for new intelligent systems, has leveraged the capability of its MPPA[®] ("Massively Parallel Processor Array") processor and its optimized fast-path software to develop a new NVMe/TCP profile for its Kalray Target Controller (KTC[™]) solution. NVMe/TCP brings the opportunity to disaggregate storage from the compute servers in infrastructures using regular and ubiquitous TCP protocol, re-using existing Network Interface Cards ("NIC") and switches for easy deployment and optimized cost.

Kalray's innovative PCIe cards can be seamlessly configured to support NVMe-over Fabric ("NVMe-oF") either over RDMA ("RDMA over Converged Ethernet" or RoCE) or over TCP protocols. This dual-persona capability brings the flexibility required in evolving data centers, minimizing investments while maximizing the return and lifetime of the NVMe-oF storage disaggregated infrastructure. Integrators and users can therefore repurpose their JBOF ("Just a Bunch of Flash") systems.

Integration into Wistron's Lymma JBOF

Wistron of Taiwan, one of the largest suppliers of Information and Communication Products (<u>www.wistron.com</u>), selected the new solution to be integrated into a version of its Lymma JBOF and give data center operators & storage appliance makers rapid access to a complete product.

Kalray has been an early supporter of the NVMe-oF standard and the first company to receive the NVMe-oF certification for a complete solution from the University of New Hampshire InterOperability Laboratory (www.iol.unh.edu).

"NVMe/TCP is opening the door for a democratization of the storage disaggregation", says Olivier Lauvray – Executive VP and General Manager of Kalray's Data Center Business Unit. "Our 10/40Gbps solution allows for mature data centers to expand the lifetime and value of their assets without a high investment, while our 25/100 Gbps solution is aiming at new data center infrastructure deployments".

KTC™, enabling cost-effective storage disaggregation

KTC[™] fully packaged solution is enabling JBOF or JBOD ("Just-a-Bunch-of-Disks") integrators to rapidly develop and deploy solutions based on NVMe-oF. It consists of a Kalray PCIe card using a single MPPA[®] processor that integrates all the software required to support a JBOF/JBOD NVMe-oF target controller functionality. There is no need for an additional costly and power-hungry processor or additional FPGA. With a MPPA[®] power consumption below 20W, the resulting storage solutions are very dense and cost-effective.







Kalray is continuously taking advantage of the unique computing capability, architecture flexibility and standard programmability of its MPPA[®] intelligent processor, to develop and enable system solutions with the lowest Total Cost of Ownership for its customers. The multi-standard KTC[™] product is a good example of how Kalray's technology can enable a paradigm shift in the data center industry.

Flexibility, high performance and low latency

The first version of this multi-standard solution is now available on a 40 Gbps PCIe-based KTC[™] Card from Kalray, achieving 2.5 MIOPS, and several cards are integrated into a version of the Lymma JBOF from Wistron, resulting in a very dense solution. Further deployment of KTC[™] is planned onto the 100 Gbps PCIe Cards from Kalray and within other JBOF chassis, targeting up to 9 MIOPS per card. Demonstration will be shown at the Flash Memory Summit (www.flashmemorysummit.com).

For more information, meet Kalray at Flash Memory Summit, from August 6 to 8, 2019, Santa Clara Convention Center, California, booth #815.

ABOUT KALRAY

Kalray (Euronext Growth Paris — FR0010722819 — ALKAL) is the pioneer in processors for new intelligent systems. As a real technological breakthrough, "intelligent" processors have the capability to analyze on the fly, and in an intelligent manner, a very large amount of information, and to make decisions and interact in real time with the outside world. These intelligent processors will be deployed extensively in fast-growing sectors, such as new-generation networks (intelligent data centers) and autonomous vehicles, as well as healthcare equipment, drones, and robots. Kalray's offering encompasses both processors and complete solutions (electronic boards and software). Created in 2008 as a spin-off of CEA ("Commissariat à l'énergie atomique et aux énergies alternatives", the French Alternative Energies and Atomic Energy Commission), Kalray serves customers such as server manufacturers, intelligent system integrators, and consumer product manufacturers, including car makers. For more information, visit <u>www.kalrayinc.com</u>.

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