



XSIGHT LABS E-SERIES E1L

200 GE DPU with Linux Data Plane
for the Hyperscale Cloud and Edge

OVERVIEW

The Xsight Labs E1L Data Processing Unit is a highly integrated compute, networking, and storage platform, designed for cloud and data center infrastructure workloads.

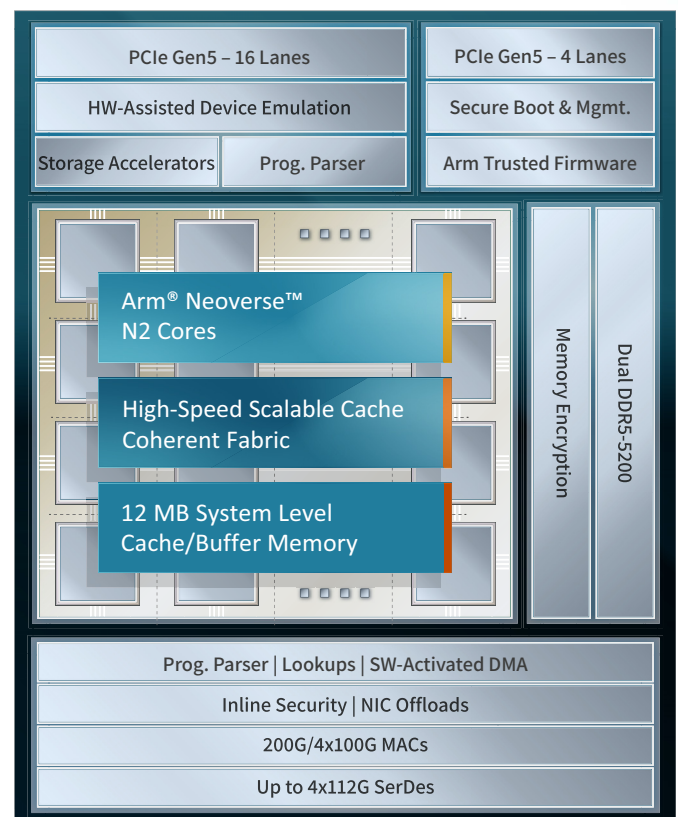
Featuring the industry's only programmable Arm®-based data plane DPU, with up to 22 N2 cores, the E1L integrates 200 Gbps of accelerated networking, wire-speed inline security, storage offloads, and a customizable PCIe fabric.

The E1L is supported by an open, standards-based, and extensible programming model.

The E1L integrates a high speed coherent-interconnect and 12 MB of internal RAM, presented as a configurable mix of latency-deterministic direct-mapped memory and DRAM-backed system level cache, passing every packet through the E1L processing array, while supporting large control structures.

Its scalable, multi-core architecture brings a standard software development model to DPUs and allows for unified, coherent, control and data planes. Native support for in-kernel and user-space networking frameworks such as XDP and DPDK/SPDK democratizes SDN and SDS feature development and portability.

As a host, the E1L delivers best-in-class performance per watt and TCO metrics for memory intensive, scale-out workloads associated with edge cloud architectures.



FEATURES

Compute and Memory

- Up to 22 Arm Neoverse N2 v9.0-A cores
- 12 MB of internal RAM, presented as System Level Cache or direct-mapped memory, with NUMA and MPAM support.
- Up to 2 DDR5 at 5200 MT/s with memory encryption
- High Speed coherent interconnect

Programmable PCIe Fabric

- 16 PCIe Gen5.0 lanes, 4 dual-mode controllers
- PCIe configuration space emulation
- Software based MMIO space emulation
- SR-IOV with up to 64K PF/VFs and scalable IOV
- Up to 2 hosts/device
- Peer-to-peer PCIe switching with address translation

Accelerated Networking, Storage and Security

- Up to 200 Gbps networking throughput with four 112/56/25/10G SerDes
- 1x 200G, 4x 100/50/25/10G port configurations
- Protocol-independent programmable parser and multi-stage exact match lookup with DRAM-backed tables
- Line rate AES-GCM network crypto supporting IPsec ESP and UDP SEC
- DMA engines with cache stashing
- Stateless offloads: Checksum, RSS, TSO, RoCEv2 iCRC
- Line rate block storage crypto with AES-XTS
- Storage Protection Information offloads including T10-DIF/DIX, CRC GMAC, and scrub CRC

Secure Management

- 4 PCIe Gen5.0 management lanes, 2 dual-mode controllers
- 2x 1 GbE or 2.5 GbE for out-of-band provisioning
- Arm-based firmware processor with UEFI secure boot, hardware root-of-trust
- I2C/I3C/SMBus, SPI/QSPI and SMI interfaces
- UART, GPIO, 1588 RTC, JTAG interfaces
- UFS 4.1 Interface

Open, Standards-based, Extensible Software

- UEFI Secure boot with Arm Trusted Firmware (TF-A)
- Arm SystemReady certification for running unmodified Linux distros
 - + Debian, Ubuntu, SONiC, Lightbits Labs LightOS™
- Linux Netdev, VirtIO and Xsight Network Adapter (XNA) drivers
- Custom SDN data planes with Linux, XDP and DPDK/SPDK programming models
- Infrastructure software and reference applications
 - + Emulated NVMe, RDMA and Network devices as DPDK/SPDK applications
 - + SONiC with DASH data plane
 - + Virtual Switch, RoCEv2

E1L SYSTEMS

Xsight Labs E-Series solutions are available in multiple form factors, depending on deployment needs.

As a discrete solution, the E1L devices can be deployed as DPUs to handle distributed services, or as a host for scale-out.

The Xsight Labs E1L-COM-Express is a standard COMe card, optimal for control-plane applications.

The Xsight Labs E1L-Server is a 1RU compute system with 200G of integrated network, optimal for edge-compute workloads.

E-SERIES FEATURE TABLE

The E1L product family is offered in different variations all sharing the same software and feature-set and interoperability. For additional product information, contact sales@xsightlabs.com.

Feature	E1L - 2 2	E1L - 16	E1L - 8
Arm Cores	22	16	8
System Level Cache	12 MB	8 MB	8 MB
Memory	2 x DDR5-5200 MT/s	1 x DDR5-5200 MT/s	1 x DDR5-5200 MT/s

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