LEWIS RHODES LABS – NPUs**earch**™ Integrated Search-in-Storage on Samsung SmartSSD® CSDs powered by Xilinx FPGAs

**WHAT IS NPUs**earch™?**

Lewis Rhodes Labs’ NPUs**earch** uses a novel neuromorphic processing technology integrated into storage to accelerate data search capability.

Lewis Rhodes Lab’s Neuromorphic Processing Unit (NPU) is the core of NPUs**earch**. Designed with the fine grain parallelism and hierarchical structure of the brain, the LRL NPU functions as highly efficient pattern matcher to accurately and rapidly scan data.

NPUs**earch** supports efficient, scalable content search of big data in storage, providing an innovative solution to a significant unsolved problem.

**PRODUCT FEATURES**

The NPUs**earch** capability is integrated into a dual-CPU supported appliance containing 96 TB SSD storage. Full content search of unindexed data collection is regex accessible via Jupyter Notebook or other Python-based interface. The deterministic search feature scans an entire database within minutes - independent of query or data type - returning to CPU only the requested items of interest.

**NPU ADVANTAGE**

> Low power consumption
> Fixed latency
> Fixed throughput
> High resolution accuracy

**FULLY SCALABLE SEARCH-IN-STORAGE**

> Supports data monetization
> Minimizes indexing burden
> Optimizes CPU utilization
> Decreases network demands
> Utilizes high performance PCIe

Adaptable. Intelligent.
NPU INTEGRATED SEARCH-IN-_STORAGE

**Novel Architecture**

- Rapid, deterministic search
- Reduce CPU costs
- Move only data of interest
- Light network demands
- Minimize data flow
- Scalable search capacity

**SEARCH PETABYTES IN MINUTES**

- Inconsistent search capacity
- CPU-intensive cost profile
- Move all data to CPU to search
- Heavy network requirements
- High volume of data flow
- Unable to scale performance

**COMPARE CPU-BASED SEARCH**

**Traditional Architecture**

TAKE THE NEXT STEP

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