**Introduction**

Eliovp provides extremely fast cloud-based servers to a range of customers who demand the highest-performing CPUs, GPUs, and storage technology for blockchain workloads. With business growing significantly, Eliovp constantly evaluates the latest technologies to deliver its customers the fastest and most reliable services. Eliovp offers customers a range of solutions that can be purchased and installed in the customer’s data center or a colocation facility, depending on the requirements. In addition, Eliovp is an expert in blockchain technology and has the expertise to modify the operating system and other tools to get the most out of Supermicro A+ servers with AMD EPYC™ processors.

**Challenges**

Eliovp was experiencing an increased demand for its services, including file storage, rendering performance, and computational performance. In addition to meeting...
performance requirements for specific deployments, the need for efficient compute (power optimization) as well as the cost and reliability of the infrastructure became very important due to the scale of deployments. Eliovp recognized that standard servers need optimization to perform as required for blockchain calculations which are becoming critical in many industries. With each new generation of CPUs from AMD, a deep understanding of the internal capabilities of these CPUs is needed, and the expertise to take advantage of new instructions, memory layout, and the associated GPU technologies.

**Solution**

After careful consideration, for one of Eliovp's projects, Eliovp selected Supermicro A+ servers with the AMD EPYC™ 7543 and AMD EPYC™ 7313 CPUs. These computational servers also contain the AMD Instinct MI100 series of GPUs. Furthermore, Eliovp has optimized its software for the AMD Instinct M100, which can be leveraged for the AMD Instinct MI250. These systems are designed to support up to 32 DIMMs to deliver high capacity and cost savings based on the demanding requirements. In addition, Eliovp also acquired storage systems.

The compute servers that Eliovp depends on are based on workload requirements. The AS -1124US-TNRP is used mainly for PoRep SDR encoding (SHA2-256 hashing of layers). The most critical feature of the AMD EPYC 7543 was the high core count, SHA-NI instruction set, and increased processor speed.

Eliovp uses the Supermicro AS -4124GS-TNR servers in this project for a vast amount of multitasking, such as Merkle tree generation using the Poseidon hashing algorithm, which contains dual AMD EPYC 7313 CPUs and 8 GPUs per server. These systems are used for the creation of SNARKS, which utilizes the AMD Instinct GPUs.
Figure 2 - AMD Based GPU Server with AMD Instinct GPUs

Benefits

Once installed, ElioP saw an immediate improvement in the responsiveness of the CPU servers, and power savings due to the optimized configurations. Blockchain calculations ran up to 35% faster than their previous generations of servers. In addition, by working with Supermicro, ElioP could acquire and tune the systems faster than ever before. Customers benefit from this close partnership by being competitive and joining the vast majority of new blockchain-related projects in less time, which increases profitability and lowers costs.

"Our relationship with Supermicro and AMD is extraordinary. We are extremely pleased with the responsiveness of both companies whenever an issue arises. The servers' performance is amazing, which increases our business, and reduces costs. By working with Supermicro, we can get new generations of servers with AMD technology earlier in our development cycle, enabling us to bring our products to market faster."

- Elio Van Puyvelde, CEO of ElioP