Optimize your Elasticsearch hot tier with HPE Alletra Storage Server 4210

Become data-driven

Massive amounts of varying types of machine data are constantly being generated—from customer information to business operations and market analysis. Moreover, the digital exhaust must be processed and indexed to be queried to gain business insights such as trend identification, historical performance comparisons, or security monitoring and investigations. Therefore, not only do organizations need to determine how to manage and analyze large and growing data sets, but they also need to be able to discover insights from this data to drive better business outcomes.

Elastic® offers solutions that help organizations derive value from their data to make informed decisions and stay competitive in a rapidly changing business environment. Elasticsearch® supports data tiers, enabling organizations to optimize their storage resources based on different needs and usage patterns. A tiered approach organizes data based on value, access frequency, and performance requirements. Typically, data is classified into three or more tiers, with the most frequently accessed data stored on highly performant storage media and less frequently accessed data stored on lower-cost, slower storage media. HPE Alletra Storage Server 4210 is an optimal server-based infrastructure to power accelerate indexing, faster queries, and time to insights.

The hot tier for Elasticsearch

The hot tier is the Elasticsearch entry point for time series data and handles the indexing load. This tier contains the most frequently accessed and critical data. This data is actively being written to and queried, and needs to be quickly accessible for analysis and other applications. For this solution, the hot tier for the Elasticsearch cluster consisted of a group of HPE Alletra Storage Server 4210 capable of handling high volumes of data and query traffic while delivering fast and reliable results. HPE Alletra Storage Server 4210 scales easily—limiting issues with shard allocation or insufficient hardware resources. In addition, HPE Alletra Storage Servers have fast I/O storage and ample CPU and memory resources to accelerate indexing and reduce query times, helping you quickly gain business insights.

Power Elasticsearch with HPE Alletra Storage Server 4210

HPE Alletra Storage Server 4210 addresses divergent data demands with the right mix of speed and capacity in a highly flexible architecture. They are optimized to store data and process multiple workloads on a single platform, accelerating time-to-insights and avoiding fragmentation. An all-NVMe storage design that's powered by dual Intel® Xeon® 6 processors with next-generation technology, including 16 DIMM channels per processor that support up to 144 cores and up to 4 TB of DDR5 memory at speeds up to 6400 MT/s, HPE Alletra Storage Server 4210 is an exemplary server-based infrastructure solution for Elasticsearch hot tier data nodes where extremely high performance is essential. These storage servers are known for their ultra-dense capabilities, which make them suitable for storing and accessing billions of files and objects. Data-intensive applications from across the enterprise can run on an optimal balance of superior data capacity, throughput, and processing for data storage-centric workloads in ultra-dense, standard rack depth form factors that are seamless to deploy in any data center.

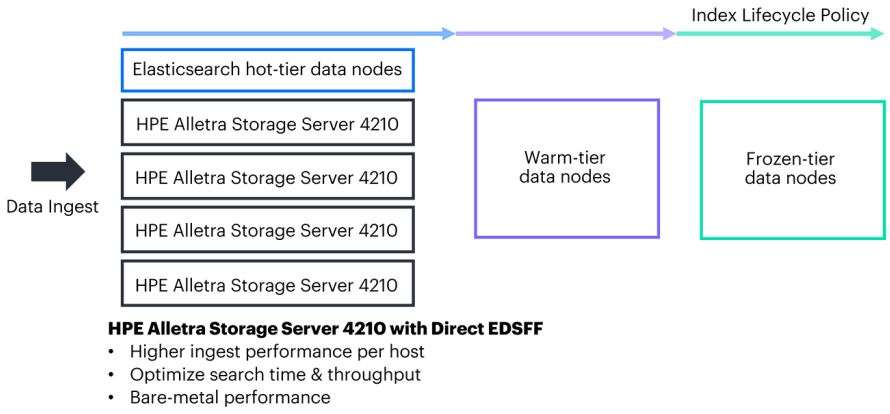

Figure 1. Overview of Power Elasticsearch with HPE Alletra Storage Server 4210

Secured end-to-end by design

With the silicon root of trust from HPE and a zero trust security framework to ensure firmware integrity, this server continuously detects if it is compromised and is prevented from booting if malicious code is found. Additionally, this server is safeguarded with default IDevID certificates. They provide security with a physical bezel lock, logical Configuration Lock, Secure Boot, FIPS 140-2 Smart Encryption and Self-Encrypting Drives, and Secure Erase. HPE Integrated Lights Out 7 (iLO 7) provides real-time operational feedback on server performance, plus recommendations for fine-tuning BIOS settings to customize for changing business needs. These aspects of the end-to-end security design of HPE Alletra Storage Server 4210 combine to deliver a hassle-free infrastructure that securely accelerates your organization's data-driven initiatives to success.

Intuitive cloud experience

The HPE Alletra Storage Server 4210 can be easily self-managed with HPE GreenLake cloud using HPE Compute Ops Management, which includes energy and carbon footprint reporting, for an intuitive cloud experience. As a result, customers can automate and transform otherwise complex and time-consuming management operations into a simplified experience regardless of physical location. This brings cloud computing and storage resources to where apps and data reside to reduce time-to-value, boost operational excellence, free up capital, and empower IT staff to innovate for what's next.

Meet the demands of your data

Data is a strategic asset for achieving better business outcomes, whether in a data-driven organization or one undergoing a digital transformation. Effectively storing, protecting, and analyzing data to derive value is core to successful day-to-day operations and delivering sustainable and differentiated products, services, and experiences. No matter the workload, HPE Alletra Storage Server 4210 helps organizations keep pace securely, economically, and with operational simplicity to focus their limited capital resources and personnel on their data-driven initiatives. HPE Alletra Storage Server 4210 is an optimal server-based data infrastructure for the Elasticsearch hot tier. They provide bare-metal performance, faster indexing, and optimized search times due to direct access to the NVMe drives.

HPE GreenLake cloud services deliver a high-performance, always-available, and proactively scalable end-to-end solution for the Elastic Stack. It efficiently meets the performance and capacity demands of hot, warm, cold, and frozen data tiers, ensuring cost-effective operations and maximum scalability across the entire stack.

Resource

Technical Presentation: HPE Storage Solutions for Elastic Stack:

hpe.seismic.com/Link/Content/DCPhRJdgW9jmqG4DTWXJCPhp9B7j

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