NGD Systems:
Closing the Storage-Compute Gap

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Executive Summary: The advent of high-performance, high-capacity flash storage has changed the dynamics of the storage-compute relationship. Today, a handful of NVMe flash devices can easily saturate the PCIe bus complex of most servers. To address this mismatch, a new paradigm is required that moves computing capabilities closer to the data. This concept, which is known as "In-Situ Processing", provides storage platforms with significant compute capabilities, reducing the computing demands on servers. For applications with large data stores and significant search, indexing, or pattern matching workloads, In-Situ Processing offers much quicker results than the traditional scenario of moving data into memory and having the CPU scan these large data stores. In-Situ Processing can also enable existing applications to scale to much greater levels than is