⊲EROSPIKE

INCREASING PERFORMANCE WHILE DECREASING COSTS

APPNEXUS
Aerospike customer AppNexus offers one of the industry's most advanced technology platforms that empowers companies to build, manage and optimize their entire online advertising business.

CHALLENGES

AppNexus needed a cost-effective storage solution with predictable low latency and high throughput that could scale rapidly as business grew. They needed to manage increasingly large amounts of data and, as the business grew, database infrastructure swelled to about 50 machines per cluster, resulting in increased maintenance, energy consumption, and operational costs.

With infrastructure reaching capacity limits, a new storage solution was needed to support company growth and provide high quality service to customers. AppNexus wanted to reduce cluster size and simplify operations. An architecture consisting of a small number of large capacity PCIe cards did not meet their targets for price, performance, reliability, and serviceability.

SOLUTION

AppNexus found that a SATA-based SSD solution with a large number of smaller devices delivered better performance and was less expensive. After testing many SSDs AppNexus chose the Intel Solid-State Drive DC S3700 Series and the Intel Solid-State Drive DC S3500 Series in the Dell R720xd chassis and the H710p host controllers. This hardware configuration provided the foundation for the next generation storage system and the Aerospike deployment at AppNexus, used for managing key user information in the online advertising and real-time bidding market segments.

RESULTS

AppNexus now has the capacity to support business growth while providing customers with a high quality of service. They see greater capacity with remarkable performance, reliability, and serviceability. By integrating Intel SSDs in a wide SATA configuration, AppNexus reduced its cluster size from about 50 machines to 8 machines per cluster, lowering maintenance, energy, and operational costs.

AEROSPIKE

The Aerospike distributed database uses DRAM and Solid-State Drives (SSDs) or Flash PCIe cards for predictable high performance, mission-critical applications. Aerospike scales up by managing indexes in DRAM and data in DRAM and Flash, and scales out to consistently process over 200,000 transactions per second per node with sub-millisecond latency. Aerospike is the first database to demonstrate how Flash and SSD technology can be used as part of an in-memory computing architecture for real-time big data driven applications.

AppNexus

"We run Aerospike heavily, peaking at 3 Million reads per second and well over 1 1/2 million writes a second in a very cost effective way. I don't think there's any technology we've run into that even comes close. [With Aerospike, we reach] 2.5 million impressions a second at peak, although we can go much higher, and we see north of 90 Billion impressions per day and this is a 24×7 business with 100% uptime with Aerospike."

GEIR MAGNUSSON
CTO
AppNexus