ORACLE

Oracle NoSQL Database - Use Cases

BACKGROUND

Oracle NoSQL Database Cloud Service (**NDCS**) is designed for applications that require either flexible data models, workloads demanding predictable, lightning fast access to data or easy to use APIs.

NDCS is a fully managed database for documents, columnar and key-value data, providing ACID transactions, predictable single digit millisecond response times, with data replication for high availability and elastic scalability.

Examples include Internet of Things (IoT), Fraud Detection, Gaming, Digital Advertising, Ecommerce, Customer Loyalty Programs and many more.

PERSONALIZATION & ECOMMERCE

To enable a rich and responsive personalized user experience, modern applications require extremely fast access to many fragments of database data. In fact, it is common for especially rich customized user interfaces to read tens to hundreds of data fragments during page rendering. To serve each user with predictable page load times (typically less than two seconds), each database access must predictably complete in a few milliseconds, no matter how many users your application is serving concurrently.

As the business grows, acquiring ever more users, the latency of database requests must remain predictable. A common practice is to use customer browsing behavior, historical purchases, and other demographic data to present product recommendations. These recommendations are then stored in NDCS, typically as JavaScript Object Notation (JSON) data, for fast retrieval and rendering of UI elements. Hierarchical product catalog data, recent purchase history, and product recommendations are examples of the kinds of data required to customize a great user experience. With its predictable single digit millisecond latencies, rich JSON data support, and automatic scale out, NDCS is the ideal platform for enabling a personalized user experience.

REAL-TIME FRAUD DETECTION

Electronic card payments have grown at an average yearly rate of 8.6%, to a total of 37.3 billion transactions per year. Accompanying this increase in volume is a corresponding increase in potential fraudulent transactions.

As fraud detection models get more sophisticated, organizations have moved fraud scoring closer to the point-of-sale (POS), to prevent fraud proactively, rather than responding reactively. Adding fraud scoring into the POS transaction path requires a data store capable of responding with predictable low latency to a high volume of lookup and update requests. Furthermore, as transaction rates fluctuate with seasonal peaks in demand, the data store must adapt accordingly: transparently scaling to meet peak demands and contracting during low demand periods to save costs. NDCS provides a perfect platform for implementing your real time fraud detection solutions. How? By its support for key/value access, predictable low latency at scale, and the capability to elastically scale up or down automatically on demand.

INTERNET OF THINGS (IOT)

What is the IoT space? In simple terms, the IoT is a system of interconnected devices passing information from one to another without human intervention. Typically, this capability

requires edge processing, network connectivity, data storage, and back end analytics processing.

Equally important, but often not publicized, is how and where back end data is stored. A viable IoT back end must handle blindingly fast write operations, while simultaneously supporting data analytics demands for read operations. NDCS, with its support of time series data, deterministic automatic data expiry, and the ability to scale to handle extreme insert velocity, while concurrently supporting analytic data read demands, is an excellent choice for the data storage of IoT style workloads.

In addition to high velocity data ingestion, the back end must support the data formats of popular IoT transmission protocols. While also supporting fixed schema and key/value data formats, NDCS offers native support for JSON objects, one of the most common data formats used by IoT data protocols. Using the NDCS JSON data type, IoT applications can store and query high volumes of data, with minimal extra processing to transform the data payload. With NDCS' rich support for SQL over JSON data, and deep support for JSON secondary indexes, the IoT development task for back end storage and analytics preparation becomes much simpler and the time for implementation and deployment for your IoT solutions shrink accordingly.

GAMING

Oracle NoSQL Database allows game developers to focus on developing the game instead of managing the database. Many games need the ability to store attributes about the game while the game is being played. This can be a wide variety of things such as time played, character information, places visited, user profiles, enemies killed, leaderboard, last time played, etc. All of these needs can either be stored in columnar or document format and accessed quickly during game play using Oracle NoSQL Database.

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