

Kraft's Nabisco Biscuit and Snacks Group Utilizes Aggregates to Improve Data Warehouse Query Performance

When it comes to data warehouse query performance, speed is everything. Faster performance means needed data and analysis is available to act upon -- quickly. In order to achieve this goal, data warehouse experts agree that data aggregates can be a very powerful tool. According to Ralph Kimball, expert and author of *The Data Warehouse Lifecycle Toolkit*, data warehouse administrators can "expect anywhere from a tenfold to a thousand-fold improvement in runtime performance by having the right aggregates available."

Aggregates are pre-stored summary records held in a data warehouse and are usually built from the base layer upward, culminating in high-level totals. For example, a data warehouse administrator may decide to build aggregates for sales based on product, store, and time-related totals such as month and year. Tables of aggregates eliminate the time and resources required to summarize data each time it is needed to respond to a query, allowing the query to be answered very efficiently in just a few seconds.

One group that has benefited from the use of data aggregates is Kraft Foods New Jersey based business, including the Biscuit, Confections and Snacks Divisions, which generate an enormous amount of customer, manufacturing and sales data. These Kraft businesses include such icon brands as *Oreo* cookies, *Ritz* crackers, *Life Savers*

candies, *Altoids* mints, and *Planters* nuts.

The data aggregates are used by Kraft's sales, finance and marketing staffs to analyze both customer SKU and manufacturing data for these divisions. They consist of current year to date as well as the previous two years' sales information. To create these aggregates, Kraft used a combination of UNIX joins and SyncSort for UNIX (from Syncsort Inc., Woodcliff Lake, NJ) running on an IBM RISC 6000 Silver Node with four gigabytes of memory and four processors. The computer system stored the company's extensive facts.

Although this process was providing the results the company needed, the Information Services team realized they had a potential problem. They were limited in the amount of time they had to create the aggregates but were receiving a growing number of requests. "With a batch window of only five to six hours a night, we needed a faster methodology to build the multiple new aggregates that are continually required by our users," said Neil Gurwitz, Project Manager of Information Services, Kraft Foods. After an extensive review of the products available, the team decided that Sigma (from Syncsort Inc.) offered the best solution. This high-performance utility allowed the team to create and manage data aggregates rapidly, easily, and accurately.

"We chose Sigma because of its demonstrated capabilities and because

of Syncsort's reputation for high quality products and service, which we've experienced firsthand during years of using their data management products." The team runs Sigma on an IBM RISC 6000. The computer system utilizes AIX 4.4.3, and the warehouse database features Informix Red Brick Release 6.0.2.

"Sigma's GUI front end makes it fast and easy to create new aggregates, and review or modify existing ones," Mr. Gurwitz added. Kraft uses Sigma to build a total of 13 aggregates that consist of current and two prior years of sales history. The application is written in Powerbuilder and has dynamic online reporting and dynamic batch reporting.

Since its implementation, Sigma has helped Kraft to reduce by the amount of time it takes to define and maintain aggregates and has dramatically cut response time for database queries. With this approach to creating new aggregates, Kraft is confident that they have the ability to provide the queries that their employees need in the fastest and most efficient way.

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