

SPOTLIGHT ON SYBASE IQ

*Results from the 2003
Winter Corp. TopTen™ Program*

SYBASE IQ IS A DATA WAREHOUSE SERVER designed for large-scale, complex query and data analysis. It had a significant presence in the 2003 Winter Corp. TopTen Program survey of the world's largest and most heavily used databases. This report presents Sybase IQ's achievements in the recently completed TopTen survey campaign. It also profiles one of Sybase's leading customers, Korea's Health Insurance Review Agency (HIRA), a multiple winner in the program.

Background

The goals of Winter Corp. TopTen Programs are to identify the world's largest databases and to recognize the database practitioners who are defining the frontiers of database scalability. The 2003 campaign was the fifth such program executed by Winter Corp., a leading, independent authority on large database technology and implementation. Winter Corp. TopTen Program findings and research have been featured in *The New York Times*, *InformationWeek*, *ComputerWorld*, *eWeek*, *Intelligent Enterprise*, *DM Review*, *CIO* and other leading industry publications.

Winter Corp. TopTen Program participants, who are the owners and managers of large databases, complete a brief survey on database size, performance and operating environment. Participants are required to validate their submissions by running queries and conducting other procedures developed by their database vendor and Winter Corp. The surveys are categorized by usage (online transaction processing or decision support) and operating system platform. Awards are given to the leaders in database size, normalized data volume, number of rows/records and workload. In the 2003 campaign, there were 21 "TopTen Lists" of the world's largest databases.

Program Results

In a testament to Sybase IQ's scalability, the program findings demonstrate that Sybase IQ manages some of the world's largest data warehouses. Sybase customers captured 22 out of 80 or **over one-quarter of the awards** earned by decision support systems for database size and number of rows/records. This achievement included two Grand Prize (first place) awards earned by Sybase IQ customer comScore Networks in the categories of Database



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Size and Number of Rows/Records on Windows platforms. In fact, in these two categories, the *first, second and third ranking* organizations were Sybase IQ customers. Sybase IQ also captured eight spots in the Normalized Data Volume categories, demonstrating the effectiveness of its compression technology.

Figure 1 illustrates the success and appeal of Sybase IQ in the multi-terabyte range.

Note that over half (54%) of Sybase IQ sites participating in the program qualified for the largest size category, 5 or more TB of data.

Reviewing the actual and projected data growth rates for Sybase sites in the program provides insight into why **Sybase IQ was widely used when data requirements were challenging.**

The table below presents findings from the 2001 and 2003 TopTen Programs. During this period, database size for participating Sybase sites grew significantly.

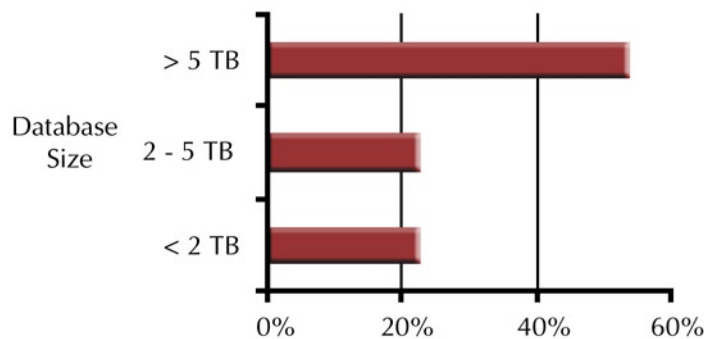
Actual Growth Database Size*	2001	2003
	1.3 TB	5.6 TB

*Figures are based on participating Sybase IQ databases with at least 1 TB of data. Size includes user data, summaries, aggregates and indices, and excludes freespace and redundancy.

Projections for growth beyond 2003 were also substantial. Based on estimated size, Sybase IQ respondents forecast that by the end of 2005, the average size of their database will be 13.5 TB. By the end of 2006, this figure stretches to 15.7 TB.

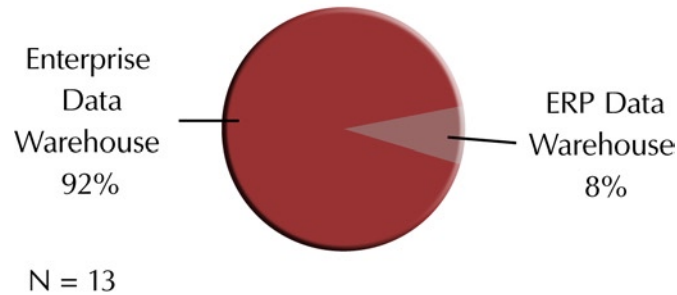
Projected growth rate, based on estimated size, for these time periods are 132% from 2003 to 2005 and 179% from 2003 to 2006. Considering the

Figure 1: Percent of Sybase IQ Databases by Size in Program



N = 13

Figure 2: Sybase IQ Data Warehouses in TopTen Program



growth surge between 2001 and 2003, Sybase respondents could very well have under-estimated these projections.

Sybase customers also demonstrated sizeable growth in row count, another metric of scalability measured by the TopTen Program. In the 2001 program, the average number of rows in Sybase IQ warehouses was 2.5 billion. By 2003, this number had jumped to 57.4 billion and could easily approach the 100-billion mark in the next 12 months. This increase may be attributable to the unusually efficient time and space indexing capabilities of Sybase IQ.

Figure 2 shows how Sybase IQ respondents are using their database.

This graph confirms that Sybase IQ is managing large and complex *enterprise data warehouse* implementations. Data warehouses bespeak a multiplicity of applications, dispersed user populations, taxing data loads and challenging performance requirements. The fact that all Sybase IQ implementations were identified as data warehouses rather than data marts shows that Sybase IQ is tackling the rigorous demands of enterprise data warehousing.

Sybase promotes uniquely advanced compression capabilities as a major product strength of Sybase IQ. Results from the TopTen Program support this claim. The compression ratio calculated for Sybase IQ sites was 2.18, nearly twice the average figure for decision support databases in the program. Based on this finding, organizations looking for a space-efficient data warehouse solution would do well to consider Sybase IQ.

Case Study

A data warehousing application at HIRA, Korea's national Health Insurance Review Agency, illustrates the benefits of using Sybase IQ. HIRA participated in the 2003 program and received six prizes in the Database Size, Normalized Data Volume and Number of Rows/Records categories.

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HIRA was directed to consolidate hospital data for a five-year period for *all* of Korea's 45 million citizens. This project resulted in an intimidating 25 TB of raw data and over 100 TB of storage. HIRA was drawn to Sybase IQ because of its compression and indexing technologies. Other high-priority requirements were fast performance and hardware independence, which were satisfied by Sybase IQ's open architecture and benchmark results.

It took only 12 months to design and bring the new data warehouse online. Sybase IQ turned 25 TB of raw data into about 7.5 TB of highly indexed, compressed data. According to HIRA, the new warehouse has enabled them to reduce analyses of non-standardized data from three *days* to three *hours*. HIRA is using the database to investigate medical care expenses, resulting in significant improvements to HIRA's financial procedures.

Conclusion

Sybase IQ had a significant presence in the Winter 2003 TopTen Program, indicating its growing acceptance in the high-end data warehousing market. Four of the eleven respondents whose normalized decision support data volume exceeded 10 TB used Sybase IQ as their enterprise data warehouse solution. On average, participating Sybase IQ databases compressed data 52%, compared to the average compression for all other DBMSs at decision support sites, 35%. Sybase IQ's compression capabilities may be a key element in the quest to control burgeoning data resources and rising IT budgets. This strength, combined with Sybase IQ's sophisticated indexing and access technologies, make it a high performance, resource-efficient solution for many large-scale data warehouse applications.

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*We help users and vendors understand their opportunities;
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