



The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization:
Delphix

Organization URL:
www.delphix.com

Project Name:
Delphix Data Virtualization Platform

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

The technology is used to eliminate the significant amount of energy spent by public and private organizations in their IT operations. On average, an organization of 5,000 employees or above has 300 to 800 databases running in data centers. Each of these databases generates 5-10 copies, for development, test, and reporting purposes, and each database also requires backup, archive, and disaster recovery infrastructure. This large "tail" consumes significant energy as well as redundant hardware, transportation costs, etc. As an example, the Library of Congress in Washington, D.C. has maxed out its power consumption in its primary data center and cannot add new systems and services without decommissioning existing ones. Delphix addresses the energy and related costs of large-scale data centers and information management by virtualizing the information in databases and their archives. We look at 5 metrics: 1) total number of databases and related copies and supporting systems and backup systems; 2) total amount of data housed in #1; 3) time and costs of maintaining #1 and #2; 4) percentage of total data eliminated with Delphix; 5) Energy saved by system elimination.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

The solution relies on several novel technologies: First, a combination of de-duplication and storage management technologies enables Delphix to share data files across databases, maintaining the appearance and functionality of multiple database systems without actually requiring the hardware of multiple systems. Second, a combination of database change-tracking and file system technologies enables Delphix to integrate data file changes from the source databases with the virtual copies, thereby eliminating the need for supporting backup/archive systems and offsite transportation costs. As a result, with an average of 8 copies per existing source database created, Delphix eliminates 93% of storage hardware and related power and transportation costs. The technical challenge has been the integration of database management, file system, storage, and virtualization technologies in a new manner.

Please list the specific humanitarian benefits the project has yielded so far.

Several organizations have eliminated well north of \$10 million in hardware storage costs each, with related energy costs and backup transportation costs also eliminated. The results have been greatly reduced energy consumption by the types of organizations that consume the greatest amount of power.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

A public example is Corporate Express (division of Staples), which won a Green IT award in Australia for its use of Delphix to virtualize data centers and reduce energy consumption (http://www.icmgworld.com/corp/architectureawards/2011/awards_ec_bg_01.asp0).

