



NuStar Energy cuts database licensing costs in half with SAP and IBM

NuStar Energy L.P. is a publicly traded, limited partnership based in San Antonio, TX, with 8,420 miles of pipeline; 84 terminal and storage facilities that store and distribute crude oil, refined products and specialty liquids; two asphalt refineries and a fuels refinery with a combined throughput capacity of 118,500 barrels per day. The partnership's combined system has approximately 96 million barrels of storage capacity.

NuStar operates in the United States, Canada, Mexico, the Netherlands, St. Eustatius in the Caribbean, the United Kingdom and Turkey, and is one of the largest asphalt refiners and marketers in the U.S. and the nation's second-largest independent liquids terminal operator.

When NuStar Energy was divested by its former parent company, Valero Energy, it needed to run its SAP® ERP 6.0 and SAP NetWeaver® Business

Warehouse (SAP NetWeaver BW) solutions independently. During the demerger process, NuStar discovered that it would need to invest in a separate database license, as Valero had chosen not to purchase this as part of its SAP license.

Valero was using Oracle database software to support its SAP applications, and at this point, the NuStar team saw no technical or functional reason to change. When NuStar reviewed the purchase price for the appropriate Oracle license, as a matter of diligence the team also examined IBM DB2® for a cost-comparison.

Jozsef Terenyi, IT Senior Manager at NuStar Energy, explains, "The reasoning behind our choice to migrate from Oracle to DB2 was almost exclusively financial. We found that the license cost for IBM DB2 was less than 50 percent of the cost of the equivalent

Overview

Challenge

NuStar Energy looked for more cost-effective ways to operate its mission-critical SAP applications. The Oracle databases supporting SAP applications were due for an upgrade, estimated to cost \$100,000.

Solution

NuStar Energy discovered that implementing IBM DB2 could save more than 50 percent in license fees alone. NuStar Energy implemented IBM DB2 version 9.7, and with both row and index compression saw data volume savings of up to 62 percent.

Key benefits

With IBM DB2 supporting its SAP applications, NuStar Energy has reduced license maintenance fees by more than half, lowered data storage, maintenance and backup costs, improved response times by 33 percent and avoided the purchase of additional disk storage from its hosting provider.

Business Challenge

Competing independently in the global energy market following a demerger from its parent company, NuStar Energy was required to purchase its own database license for its SAP ERP and SAP NetWeaver Business Warehouse applications.

NuStar looked for more cost-effective ways to operate its mission-critical SAP applications, and reviewed its Oracle databases, which were due for an upgrade estimated to cost \$100,000.

Oracle license. This was based on a detailed analysis of cash flows and a careful evaluation of the position over a ten-year period. Admittedly, we were not able to get the favorable Oracle licensing deal enjoyed by our former parent company, which has a very significant Oracle footprint. But even with those more favorable rates, the cost for DB2 would still have been much lower.”

Striking benefits

Based on this strong financial case, NuStar Energy decided to migrate all of its SAP databases from Oracle to IBM DB2. There were two additional reasons for choosing DB2 over Oracle, as Jozsef Terenyi recounts: “We were facing the imminent need to perform a major Oracle upgrade, which would have involved significant costs, effort and disruption. We estimated the cost at around \$100,000, mainly in consultancy fees. This effectively offset the cost of migrating to DB2, and made the financial case all the more compelling.”

He adds, “We were also pushing the limits of our allocated storage capacity with our hosting partner. Oracle was promising a data compression solution, but at that time it wasn’t certified by SAP. We thought it was likely that

“The reasoning behind our choice to migrate from Oracle to DB2 was almost exclusively financial. We found that the license cost for IBM DB2 was less than 50 percent of the cost of the equivalent Oracle license.”

Jozsef Terenyi

IT Senior Manager
NuStar Energy

we would need to invest in new disk capacity within the next two years if we stayed on Oracle. The compression technology in DB2 was already available and certified by SAP, so migrating meant that we could shrink our SAP data footprint and avoid this additional future cost. This, and the avoidance of the Oracle upgrade were just the icing on the cake – but very thick icing!”

A further benefit for NuStar Energy is the coordination of the SAP and DB2 release cycles. “This is something we’ve not yet taken advantage of,

“The results we achieved with DB2 compression were quite remarkable. Some of the results were even more impressive than IBM’s initial projection of 45 percent compression – for example, we had an instance that went from 800 GB to 300 GB, a reduction of 62 percent.”

Jozsef Terenyi

IT Senior Manager
NuStar Energy

but we can see that it will be a major benefit when the time comes to upgrade,” comments Jozsef Terenyi. “We anticipate that SAP upgrades will be seamless from the database standpoint, and that we will be able to focus entirely on the application upgrade. If we had chosen to stay with Oracle, it would have increased our costs and diverted our focus away from the applications during upgrades.”

Performance boost

“We were satisfied with our SAP solution response times when using the Oracle database, which were around 0.6 seconds,” says Jozsef Terenyi. “With IBM DB2, the response times are now just 0.4 seconds. We can certainly say that migrating to DB2 gives our hosting partner more headroom in terms of meeting Service Level Agreements for SAP application performance and availability.”

The hosted hardware landscape for NuStar Energy’s SAP solutions is made up of two three-tier environments. The production, test/development and quality-assurance instances for SAP ERP run on three separate physical machines. For SAP NetWeaver BW, two physical machines are used, one dedicated to the production instance and the other hosting both test/development and quality assurance. The hardware is owned and operated by the hosting partner. Outsourcing its SAP solutions in this way allows NuStar Energy to avoid the capital cost and risk of owning its own hardware.

Shrink to fit

NuStar Energy is currently running IBM DB2 version 9.7, and making active use of the self-tuning memory management (STMM) feature, as well as both row and



Solution

During a database review for SAP applications, the company discovered it could save more than 50 percent in license fees alone.

NuStar Energy chose to implement IBM DB2 version 9.7, and with both row and index compression saw data volume savings of up to 62 percent.

Key Solution Components

Industry

Chemicals and Petroleum

Applications

SAP ERP 6.0, SAP NetWeaver Business Warehouse, SAP BusinessObjects Planning and Consolidation (BPC)

Hardware

HP DL 380G6 servers

Software

IBM DB2 9.7

index compression. IBM claimed that NuStar Energy would achieve between 40 and 45 percent compression for its SAP data using the DB2 compression technology – and the company was surprised and pleased to achieve this in production.

“When a vendor makes claims about their technology, you usually assume that these are results achieved in a laboratory environment, and they may not reflect genuine customer experience,” says Jozsef Terenyi.

“The results we achieved with DB2 compression were quite remarkable. Some of the results were even more impressive than IBM’s initial projection of 45 percent compression – for example, we had an instance that went from 800 GB to 300 GB, a reduction of 62 percent.”

The data compression provided by DB2 not only enabled NuStar Energy to avoid a costly upgrade of its hosted storage capacity, it also allows faster backup and recovery of data. In a disaster scenario, this would potentially enable the business to get back to normal production more rapidly.

Strategic solution

NuStar Energy has used SAP ERP

“With SAP ERP helping us to achieve high levels of operational efficiency, and SAP BusinessObjects Planning and Consolidation providing fast and sophisticated what-if analysis – all backed by IBM DB2 – NuStar Energy will be in a very strong position to outperform the competition.”

Jozsef Terenyi

IT Senior Manager
NuStar Energy

and SAP NetWeaver BW for more than ten years. SAP and Microsoft software are the company’s two strategic business platforms, with the SAP solutions providing a single, integrated environment for managing and understanding the business.

At the time of the migration from Oracle to DB2 – which also included

a conversion to Unicode – up to 1,000 people were accessing the SAP solutions at NuStar Energy. Today, the figure has risen to 1,200, and the concurrent peak has grown from 200 to 260 for SAP ERP applications. SAP NetWeaver BW is used by around 200 business analysts. Previously, the company operated in five time zones across the Americas and the Caribbean. These hours of operation have changed as NuStar Energy has expanded globally. Today, with its European operations, NuStar Energy uses the SAP solutions around the clock.

NuStar Energy uses the SAP Oil & Gas extension of SAP ERP, which helps the company manage the nuances of buying, selling and tracking inventory of hydrocarbon products, as Jozsef Terenyi explains: “In our industry, products are sold both by mass and by volume, so we deal both in tons and in barrels. SAP ERP is able to keep simultaneous track of those units seamlessly, which is an important benefit.”

Business analysts at NuStar Energy use SAP NetWeaver BW for cost management, financial reporting (both internal and external), sales reporting, plant maintenance and sourcing, and

to prepare safety reports for external regulators.

Improved planning

Within the SAP environment at NuStar Energy, the current focus is on rolling out the SAP BusinessObjects™ Planning and Consolidation application. “In combination with IBM DB2, SAP BusinessObjects Planning and Consolidation will be a game-changer for us, and potentially even a source of competitive advantage,” says Jozsef Terenyi. “It will replace Microsoft Excel as the primary platform for planning, enabling us to eliminate the use of vast spreadsheets with countless links and limited accountability. Using Excel, preparing company-wide earnings-plan analyses takes at least a week. With the new SAP solution running on IBM DB2, we anticipate that the full planning cycle will take only one or two days, so senior management will have much faster and more accurate insight into companywide earnings.”

He concludes, “With SAP ERP helping us to achieve high levels of operational efficiency, and SAP BusinessObjects Planning and Consolidation providing fast and sophisticated what-if analysis – all backed by IBM DB2 – NuStar Energy will be in a very strong position to outperform the competition.”

Business Benefits

- **Reduced license fees by more than half.**
 - **Lowered data storage, maintenance and backup costs.**
 - **Improved performance.**
-



IBM Deutschland GmbH
D-71137 Ehningen
ibm.com/solutions/sap

IBM, the IBM logo, ibm.com and DB2 are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. A current list of other IBM trademarks is available on the Web at "Copyright and trademark information" at <http://www.ibm.com/legal/copytrade.shtml>

Other company, product or service names may be trademarks, or service marks of others.

This case study illustrates how one IBM customer uses IBM and/or IBM Business Partner technologies/services. Many factors have contributed to the results and benefits described. IBM does not guarantee comparable results. All information contained herein was provided by the featured customer and/or IBM Business Partner. IBM does not attest to its accuracy. All customer examples cited represent how some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication is for general guidance only. Photographs may show design models.

© Copyright IBM Corp. 2012. All rights reserved.



© 2012 SAP AG. All rights reserved.

SAP, SAP NetWeaver and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and other countries.

Business Objects and other Business Objects products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of Business Objects Software Ltd. Business Objects is an SAP company.

Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.