Pharmaceutical Firm Bolsters Mission-Critical SAP Platform with Enhanced IT Infrastructure Solution

RANBAXY

Summary

Ranbaxy Laboratories is the largest pharmaceutical company in India, focusing on the research, development, and marketing of generic drugs. When the performance of its SAP enterprise resource planning system began to face challenges under the limits of a 32-bit platform, Ranbaxy decided to take advantage of the Microsoft Application Platform. The new solution—based on 64-bit versions of Microsoft SQL Server and Windows Server—provides much higher computing performance, with response times for common SAP activities improved by 80 percent or more. It also offers high scalability and availability to support continued corporate growth.

Mission-Critical Systems

Ranbaxy operates a single instance of the SAP ECC 6.0 Enhancement Pack 5 Enterprise Resource Planning (ERP) system. About 80 percent of the company's revenue-generating activities—including shop-floor manufacturing processes, invoices, sales orders, and distribution of management information—are directly affected or controlled by the SAP system. The company has 29 offices and all but one of its manufacturing operations running on the SAP ERP system. "To say that SAP is a mission-critical system for us would be an understatement," says David Briskman, Vice President and Chief Information Officer at Ranbaxy Laboratories.

Neeraj Kukreti, Director of Business Solutions at Ranbaxy Laboratories, adds, "The Ranbaxy SAP system now supports offices in 29 countries, 32 legal entities, and 8 languages, and 96 percent of the company's revenue transacts inside the SAP system."

Solution Overview

In 2008, the company was rapidly closing in on the limits of the 32-bit infrastructure that it used to run the SAP system. The company's multiple acquisitions and double-digit annual growth slowed the performance of the SAP system. It could no longer keep up with round-the-clock global operations, including sales support that operates nonstop during the week to meet company needs across multiple continents and time zones. This level of activity put severe strain on the SAP system's overall performance and usability. "The projections that we had in terms of our hardware and server usage was that the limitations would effectively stop the business," says Briskman. "We had no option but to perform a significant upgrade of our hardware."

The Ranbaxy IT team considered several different platforms for running SAP, including competitive databases and UNIX. Ranbaxy decided to refresh its SAP system by deploying a 64-bit version of the Windows Server operating system and Microsoft SQL Server data management software. In the initial steps of the upgrade process, the company deployed Microsoft SQL Server 2005 running on a 64-bit version of Windows Server 2003.

In September 2010, Ranbaxy successfully migrated its SAP business intelligence solution—SAP BI 7.0—from an older platform to Windows Server 2008 and SQL Server 2008 running on servers with Intel Nehalem EX–based processors. The migration project was run internally using the OS/DB migration tools that are delivered and supported by SAP. The Ranbaxy internal team exported 2.2 terabytes of data out of the older platform and imported the information into SQL Server 2008 over one weekend. The company noted significant performance gains on the new platform.

> *"When it comes to technical solutions in regard to SAP, there is a perception that UNIX is the better platform. But ... with SQL Server 2008 R2, we feel that there is a like-to-like comparison in terms of performance, scalability, and reliability. And the cost-effectiveness of SQL Server in terms of licensing and maintenance is much better."*
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> David Briskman, Vice President and Chief Information Officer, Ranbaxy Laboratories

In August 2011, Ranbaxy upgraded the ECC database version from SQL 2005 to SQL 2008 R2. Shortly afterward, the entire database—now more than 5.5 terabytes—was compressed to less than 1 terabyte. "We achieved an overall compression of 82.6 percent, resulting in a compressed database size of 941 gigabytes," says Sanjeev Tyagi, Data Center Manager at Ranbaxy Laboratories. "We were also able to reduce full backup time to 80 minutes as compared with initial backup runtime of about 10 hours with SQL Server 2005 and 7 hours with SQL Server 2008." Again, the entire process was completed over a weekend, with SAP fully online and no downtime.

Jitendra Tayal, Basis Team Leader at Ranbaxy Laboratories, adds, "Ranbaxy used the standard SAP graphical tool to compress the database. In fact, SAP has defaulted page compression for all new installations and upgrades for all SAP components. Our internal SAP Basis team completed a proof of concept on a copy of the production database, and the results were very positive."

Name	Size (MB)	Size after compression (MB)	Saving
BSIS	316,492	30,721	90.29%
VBFA	260,360	26,346	89.88%
LIPS	231,561	28,483	87.70%
MSEG	216,260	25,968	87.99%
ACCTIT	189,835	19,220	89.88%
CE11000	188,928	21,849	88.44%
VBRP	173,031	23,355	86.50%

Figure 1. Compression of tables and indexes at Ranbaxy using SQL Server 2008 R2.

Overall database performance improved as a result of database compression due to the significantly improved database cache hit ratio. "Prior to SQL 2008 R2 page compression, our average database cache hit ratio was about 90 percent, and the physical input/output (I/O) was as high as 800 megabytes per second, which required a high-performance SAN infrastructure," says Tyagi. "After database compression, the cache hit ratio was almost 100 percent and the amount of physical I/O dropped to almost zero." SQL Server keeps the in-cache data in a compressed format, thereby greatly enhancing the caching performance.

By using SQL Server 2008 R2, Ranbaxy has achieved dramatic improvements in backup runtimes, database verification runtimes, storage requirements, and disaster recovery costs through database compression without compromising on performance. "When it comes to technical solutions in regard to SAP, there is a perception that UNIX is the better platform" says Briskman. "But after running an internal proof of concept, our analysis is that this is not the case. With SQL Server 2008 R2, we feel that there is a like-to-like comparison in terms of performance, scalability, and reliability. And the cost-effectiveness of SQL Server in terms of licensing and maintenance is much better. I can use the money that I save on SQL Server to enhance the functional use of our enterprise system."

Ranbaxy designed its SAP environment to run on the following products:
- Microsoft SQL Server 2008 R2 Enterprise and SQL Server 2008 Enterprise
- Windows Server 2003 Enterprise x64 Edition and Windows Server 2008 R2 Enterprise
- SAP components: ECC 6.0; NetWeaver Business Warehouse 7.0; Enterprise Portal 7.0; NetWeaver Process Integration 7.1; SAP BI 7.0; Solution Manager 4.0; Supply Chain Management 7.0; Governance, Risk, and Compliance (GRC) 7.0; and BusinessObjects Planning and Consolidation 7.0
- HP Intel-based server computers
- IBM SAN storage devices
- Microsoft Premier Support

Business Pain Points Addressed

Ranbaxy relies on its SAP system to run major business operations. By migrating to a 64-bit Windows Server operating system and Microsoft SQL Server, the Ranbaxy IT department has been able to provide an uninterrupted level of high-performance computing for its global base of SAP users with greatly improved computing performance.

The solution helps Ranbaxy to:

- Deliver a system with fast response times for sales representatives, managers, and others who need information quickly for better decision making.
- Provide long-term support for a growing global enterprise operating in a highly competitive industry.
- Deploy a mission-critical system on cost-effective, Intel commodity servers using hardware and software with affordable licensing—that can be managed efficiently by internal IT staff members.
- Deploy a system that delivers fast, reliable performance to meet the demands of round-the-clock global operations across multiple time zones and continents.

Technical Pain Points Addressed

By adopting a 64-bit computing platform running on SQL Server and Windows Server, Ranbaxy addressed the challenge of upgrading an SAP system that was in danger of being inadequate to meet the needs of the rapidly growing business. With SQL Server as the backbone of the SAP system, Ranbaxy has been able to:

- Reduce average dialog response times for SAP users—even during peak month-end closing—to about 330 milliseconds, an improvement of 80 percent or more for many common tasks.
- Scale its SAP data infrastructure quickly using Intel-based commodity servers to accommodate growing databases, transaction volumes, and concurrent users while continuing to provide high performance.
- Reduce database size, backup and restore times, and storage costs.

Conclusion

With an IT solution that takes advantage of the Microsoft Application Platform and HP Intel-based servers, Ranbaxy was able to achieve the same results, performance level, and service level as a high-cost, proprietary, UNIX-based solution but at a much lower cost. Ranbaxy now has a high-performance, highly scalable SAP infrastructure that meets the demands of its growing global business.

About Ranbaxy

Ranbaxy Laboratories Limited is an integrated, research-based, international pharmaceutical company that produces a wide range of generic medicines. The company has manufacturing facilities in seven countries and serves customers in more than 125 countries. Ranbaxy is a member of the Tokyo-based Daiichi Sankyo Group, and it employs about 14,000 people.

For More Information

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