



## Solution Overview

### Microsoft Global Partners

SAP AG  
Compaq Computer Corp.  
KPMG Consulting Inc.

### Customer Profile

Air Products and Chemicals Inc. is a global supplier of gas and chemicals, with operations in 30 countries and annual revenue of \$5.7 billion.

### Challenge

Some Air Products HR and payroll systems were obsolete, others had lost vendor support, and none provided the single, global solution the company needed.

### Solution

Microsoft® Windows® 2000 Advanced Server and Microsoft SQL Server™ 2000 Enterprise Edition, running SAP R/3 HR and Payroll modules. The system serves 2,000 named users and the intranet-based employee self-service module supports 11,500 employees with up to 400 concurrent users.

### Benefits

- Air Products saved \$2.5 million by not having to purchase a separate payroll system and continuing savings through productivity improvements.
- Scalability, performance and availability. The solution achieves 99.995% availability (with 100% availability in 10 of the past 13 months)
- A revolution in Air Products' HR function: HR personnel are freed to advise line managers.

### Hardware

App Servers: Proliant DL580s  
DB Servers: Proliant 8500 Xeons  
DB Backup: Proliant DL580  
ITS W Gate: Proliant DL380s  
ITS A Gate: Proliant DL 580s

## Air Products' Microsoft and SAP Global HR solution provides 99.995% availability, yields substantial productivity savings

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*After considering Oracle and PeopleSoft for its new, global HR applications, Air Products and Chemicals chose SAP R/3 running on Microsoft® Windows® 2000 Advanced Server and SQL Server™ 2000, Enterprise Edition. The solution provides scalability and performance to support the company's 17,000 employees worldwide, achieving 99.995% availability in its first year. It provides real-time access to global HR data; by automating workflow processes, it frees HR professionals from their "policeman" role, enabling them to add value as consultants to line managers. Air Products saved \$2.5 million by not having to purchase a separate payroll system and expects to realize additional savings each year through productivity improvements.*

## Challenge

Air Products and Chemicals, Inc. is the world's only combined gases and chemicals company. Founded more than 60 years ago and headquartered in eastern Pennsylvania's Lehigh Valley, the company has annual revenues of \$5.7 billion and operates in 30 countries. Air Products is a market leader in global electronics and chemical processing, and a longstanding innovator in basic manufacturing sectors including steel, metal, glass and food processing.

With 17,000 employees around the globe, Air Products' human resources system was crucial to fueling the company's continued growth. But that system was straining to keep up. The HR system used in Europe provided limited reporting capability and data integrity, and was incompatible with U.S.-based systems, preventing the company from conducting global analysis of personnel. In the meantime, the vendor for the payroll system used by the company's U.S. operations was dropping its support, leading the company to consider alternatives. With both European and U.S. systems in play, Air Products decided the time was ripe for its first global solution, for human resources and payroll.

## **Solution: Turning to Microsoft and SAP**

Air Products conducted an in-depth evaluation process to identify both the application suite and platform for its new, global HR solution, called the Horizon Project. More than 85 staff members participated in the evaluation process, which included field trips to companies including Lyondell, Pennzoil, Nabisco and others. After considering PeopleSoft and Oracle software, Air Products chose SAP R/3's Human Resources and Payroll modules in part because of SAP's more advanced global capabilities and SAP's stronger support operation, particularly in Europe.

Air Products was already more than a year into implementation of its strategic plan to become a Microsoft-centric enterprise – but, says Joe Wechezak, SAP architecture and infrastructure lead for Air Products, “Microsoft was no ‘slam-dunk’ for the HR and payroll platform. We looked at mainframe and UNIX implementations as well.”

Air Products chose Microsoft after its visits to other Microsoft and SAP enterprises convinced it that the combination of Windows 2000 Advanced Server and SQL Server 2000 Enterprise Edition would provide both the performance and scalability that the company needed. Even better, the company could continue to leverage its expertise in Microsoft technology. The company was pleased with the performance of its more than 800 Windows servers and had a positive experience in moving applications from Sybase to SQL Server.

## **Implementing the Microsoft/SAP Solution**

The company made the decision to adopt Microsoft and SAP in early 2000, had its technical architecture finalized by mid-year and began testing its solution within a few months. The first phase of the implementation went live in March 2001. KPMG Consulting provided system integration services and Hewlett-Packard Corp. (formerly Compaq Computer Corp.) – which provided the server hardware – provided the expertise, through its Competency Center, to size the solution appropriately.

The production environment consists of one SQL Server 2000 database server and a warm backup server, three SAP application servers, and four SAP Internet Transaction Server (ITS) Web servers to power the self-service application. The quality assurance environment mirrors the production environment. The technology and development environments each consist of one database/application server and one Web server. The application servers are four-processor Proliant DL580 Xeon 700s; the database server is a three-processor Proliant 8500 Xeon 700. The Web servers are a dual-processor Proliant DL380 and a three-processor Proliant DL580.

Approximately 2,000 named users – HR professionals and general managers – access the solution directly through SAP clients while some 11,500 others access the employee self-service components over the intranet.

One of the early decisions facing the design team was how to handle two potential single-points-of-failure: the central instance of the SAP HR and payroll modules, and the SQL Server 2000 database. After consulting with its counterparts at other Microsoft and SAP enterprises, the Air Products team decided that the solution was so reliable that it could elect a simple hot-backup SQL Server log shipping solution over the greater complexity and cost associated with clustering. Database logs are cut and shipped to a backup server at least once an hour.

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Gary Tyler  
Director, Horizon Project  
Air Products and Chemicals Inc.

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Similarly, a spare Windows 2000 server provides a fail-safe for the application, should that ever become necessary. Load balancing of the SAP application is done via SAP software.

"Microsoft's outstanding support, through its SAP technical consulting team, helped us to configure and leverage best practices to establish operating procedures for our high availability environment," says Wechezak.

## **Benefits: Revolutionizing the HR Function**

The Microsoft/SAP solution is revolutionizing Air Products' human resources operation.

"We have all our HR data in one place for the first time," says Gary Tyler, director of the Horizon Project. "We understand our workforce substantially better than before. We're adopting global processes for many of our HR activities, which provides an inherent productivity gain. For example, we developed the ability to do global budgeting – including base salary, bonus and option planning – in one system. It simplifies a cumbersome process and we can see exactly where we are in real time."

Meanwhile, the Horizon Project is also benefiting employees, who use it to change their personal and beneficiary information, send employment verification to banks or other lenders, sign up for training classes, and access on-line remuneration statements. Tyler anticipates replacing the current, paper-based paycheck confirmations with online statements viewable through Horizon. Employees will have faster access to their confirmations, and Air Products will save \$50,000 each year in postage, time and printing.

Beyond delivering productivity gains and better information, the Microsoft and SAP solution has enabled Air Products to change the focus of its HR operation, according to Tyler. By automating workflow for processes such as hiring and re-assignment – processes that used to require paper trails and signatures – Air Products' HR professionals are freed from the administrative burden of shepherding those transactions through the organization. They can now spend the majority of their time on higher value-added activities.

"We're just beginning to see how the Microsoft and SAP solution can change the way we operate," says Dave Sheffield, director of Air Product's SAP Support and Competency Center. "First you have to get the system in and see what it can do. We expect to see continuous improvement and re-engineering as we gain more experience with it – and as we expand to a broader ERP solution. We'll also take advantage of BizTalk® Server and other Microsoft .NET technologies to integrate and extend our SAP systems."

## **"The Most Cost-effective Platform"**

"Microsoft is the most cost-effective platform, hands-down, so we could afford to completely mirror our production environment in QA," says Wechezak. "When we do stress testing, we have a fully accurate picture of performance and availability in production. All the phases of the rollout have been tested in this way."

The cost-effectiveness of SAP on the Microsoft platform extends far beyond the QA environment. Air Products estimates that it saved a one-time \$2.5 million, by not having to purchase a separate payroll system, and it anticipates additional savings each year through the sharing of best-practices around the world, now possible thanks to the single, global solution.

*"Availability and performance are much better than we expected -- and much better than we promised. These aren't just abstract numbers: they mean our employees can be certain that the solution will be there when they need it, and that it will perform in real time."*

Joe Wechezak  
senior architect  
Air Products and Chemicals Inc.

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## Availability and Performance

After a year of operation, Air Products is seeing 99.995% availability on its Microsoft and SAP solution, with the system hitting a perfect 100% availability in 10 of the past 13 months. Total average response time for the online solution is now below 600ms.

“That availability and performance are much better than we expected – and much better than we promised,” says Wechezak. “These aren’t just abstract numbers. They mean that our employees can be certain that the solution will be there when they need it, and that it will perform in real time. That availability and performance translates into trust and reliability.”

SQL Server 2000 is a key part of these benefits, according to Wechezak.

We appreciate the ease of use that SQL Server provides,” he says. “We only need 20% of a DBA’s time to manage the solution, since SQL Server handles so much of it automatically; we don’t have to worry about the database – it just runs.”

For example, the night before the second company-wide payroll was to be implemented with the new solution, a manual error was detected that changed everyone’s name to the same name. Instead of attempting complex code patches to address the problem, the Air Products team was able to quickly restore the SQL Server database from an uncorrupted backup, enabling batch process to continue correctly and on time.

“The entire restore took about an hour and the system was restored with virtually no disruption, thanks to SQL Server,” says Wechezak. “Our project team members were floored at how quickly the system was restored – they were thrilled.”

## Looking Ahead

With the success of the HR and Payroll solution, Air Products is now looking to repeat that formula with its first-ever ERP solution. Air Products will be using the Microsoft Windows platform for all of the SAP New Dimension products and the R/3 application servers in its ERP implementations. It is now in the process of designing and testing SAP Financial modules, SAP’s supply-chain solution – mySAP SCM – and its enterprise portal solution – SAP Portals enterprise portal – to simplify vendor and manufacturing processes, speeding time to market.

The SAP Enterprise Unification Portal and mySAP Business Intelligence solution will provide Air Products employees with a single access point to the SAP system from their desktops, as well as a collaborative environment in which Air Products’ customers can place orders electronically and vendors can access purchase orders and material forecast information. This broader solution is expected to go live the summer of 2002.

“The global ERP solution will allow us to act globally as one company, provide a platform for our business to grow, engage fully in e-business, and replace existing, obsolete applications that are not fully integrated,” says Sheffield. “SAP and Microsoft are crucial contributors to the future of Air Products.”



## For More Information

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Founded in 1972, and headquartered in Walldorf, Germany, SAP is the world’s largest inter-enterprise software company, and the world’s third-largest independent software supplier overall. SAP employs over 27,800 people in more than 50 countries. SAP has leveraged its extensive experience to deliver mySAP.com, the definitive e-business platform for today’s economy. The mySAP.com collaborative e-business platform allows employees, customers, and business partners to work together successfully -- anywhere, anytime.

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