SUCCESS STORY

Dell/Oracle

DELL

CHALLENGE	SOLUTION	BENEFIT
In January 2004, Dell's order management system "GO" was struggling to cope with an ever-increasing number of orders. Because it was always running at full capacity, "GO" was taking too long to process orders and a lack of built-in fault tolerance meant that the system often had to be taken offline for manual maintenance.	Dell decided to replace its existing platform with a clustered grid of Dell/Oracle/Linux servers. Dell and Oracle implemented the Oracle Database 10g®, running on a grid of Dell™ PowerEdge™ 6650 servers in less than two days, with no disruption to users.	• Reduces customer database search time from 40 seconds to five seconds on average • Order searches reduced from 45 seconds to four seconds on average • Quote searches reduced from 45 seconds to three seconds on average • Five-fold improvement in the overall performance of the system • Automated management greatly reduces human error • Technology can scale out to meet future requirements • Real-time fault tolerance helps ensure business continuity • The solution was deployed in just two days

Dell™ Improves Customer Service with Implementation of Clustered Order Management System

Scalable Oracle Database 10g® and Dell PowerEdge™ servers Deliver Five-Fold Improvement in Overall Performance

In early 2004, Dell's order management system "GO" was struggling to cope with an ever-increasing number of orders. Sales representatives were finding it difficult to respond to customer demand in a timely manner, and manual management of the system was resulting in increased instances of human error. To enable the system to scale out to better accommodate its current and future requirements, Dell decided to replace its existing platform with a clustered grid of Oracle/Linux servers. Dell and Oracle implemented the Oracle Database 10g®, running on Dell™ PowerEdge™ 6650 servers over a weekend, with no disruption to users. As a result of the implementation, sales staff can now process orders approximately five times more quickly, while the overall performance of the system has improved five fold. Built-in automated management in Oracle 10g helps ensure that human error is greatly reduced, and real-time fault tolerance helps ensure that the system is always accessible to its users. Not only has the system reduced costs but the new infrastructure helps Dell to be better placed to accommodate future growth.

When Dell first set up its business groups across Europe, Middle East and Africa (EMEA), it put in place a standard framework of order management systems. Each individual business unit was given the freedom to implement and use each system independently. In 1999, with 36 order management systems spanning its European operations, Dell found it increasingly difficult to sustain common business practices.

Larry Kiernan, Vice President, EMEA IT, Dell, says: "In 2000, we decided to create a single order management system but could not find an off-the-shelf product that provided the level of customisation and customer experience that we wanted to deliver.

"After thoroughly researching the marketplace, we chose Oracle Order Management for our back-end system and we wrote our own front end using the Microsoft® Visual Basic programming language. We named the resulting system "GO". The front-end suite is used by our sales representatives for interacting with our customers, and the back-end deals with tasks like order processing and credit clearing."

By the end of 2003, Dell's standardisation project was gaining momentum, and it had deployed the system across its EMEA offices in just two years with minimum impact to the business. However, due to significant growth and an increase in the volume of orders thanks to an expanding product portfolio, Dell soon found itself struggling to keep up with the ever-increasing number of transactions going through the system. Demand was outstripping supply.

ORACLE®

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>
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> Vice President, EMEA IT, Dell

Kiernan says: "There were physical limitations as to how much more the system could cope with. The "GO" environment, which was running on a proprietary system, had reached capacity. It could only support 6,000 simultaneous sales staff sessions and, due to the nature of our business, we need it to support much more than this, much faster.

Dell realised that it needed to implement a cost-effective and reliable system which could scale to accommodate future growth. Kiernan says: "We implemented Dell technology and Oracle Database 10g to help us scale out for future developments and accelerate our order management processes across EMEA."

Dell decided to upgrade its existing platform and implemented:

- Oracle 10g® Real Application Clusters (RAC) – a scalable database solution with automated management which supports deployment on clustered servers;
- Clustered four-way Dell™ PowerEdge™ 6650 servers – a more cost-effective solution that delivers enhanced, real-time disaster recovery features and additional memory;
- Red Hat Enterprise Linux AS v.3 – industry-standard technology which helps ensure that the technology can scale out to meet future requirements;
- DMX frames – a storage solution which delivers faster data access and transfer.

Why Dell and Oracle?

Dell needed to implement a new, more cost-effective system which could support its future growth. By deploying the Oracle Database 10g on its powerful four-way PowerEdge 6650 servers, Dell realised that it could fulfil both of these requirements.

Jeff Kimbell, Director, EMEA Marketing, Dell, says: "Rather than adding large, expensive, proprietary systems to our infrastructure, we wanted to add industry-standard building blocks as and when we needed them. Our own products are built on this fundamental principle, so it seemed the most logical fit for our needs both now and in the future.

"Oracle's product line complements Dell products in the way that they strive to meet customer requirements. The fact that both companies' products are designed to scale out to support future growth helps ensure that new functionality and features can be added as Dell's product line and volume of orders grow."

Quick and Easy Deployment

Historically, Dell's transaction volume is greater in the second half of the year. This peak buying time is the result of more consumer customers buying products for Christmas or as part of a back-to-school trend. Kiernan says: "Because we only finalised the solution in March 2004, we had a very small window of opportunity.

"We put a technical team together and ran some feasibility testing. When we decided to go ahead with the project, we stress-tested our environment in a lab scenario and decided to go with the Oracle Database 10g, not only because of its scalability, but also because we were confident that it could better support our mission-critical systems than our existing technology.

"The migration itself happened over a weekend in September 2004. This can be attributed to good planning, the level of our in-house expertise, and the fact that these technologies are primed to complement each other. We literally moved Dell EMEA off its existing order management system over a weekend and brought the system back online for the following Monday morning. The move was seamless for users as they didn't know that we had migrated. What they did notice, however, was that they had a much better experience in terms of the performance of the product."

Faster Processing and Improved Customer Service

In the past, Dell sales staff often found that limitations in the existing order management system meant that they were unable to respond to customer demand as quickly or effectively as they would have liked.

Kiernan says: "When you've got a customer on the phone and you're trying to talk them through a product, the last thing you need is for the system to be slow and unresponsive. Our sales staff had to make light conversation with customers while waiting for the system to respond. While it's great for us to have that dialogue with our customers, when they phone us they don't want a chat, they just want an answer. Our inability to do that was leading to poor customer satisfaction and a poor customer experience."

Sales staff experienced particular frustration with the delays encountered when requesting component level detail and customer searching. Kiernan says: "If a member of the sales team was trying to quote a complex system, it was taking a huge amount of time for them to ensure that all of the compatible components were included in the configuration and accounted for.

"In addition, some of our larger customers may have more than 200 instances of their name in our database, because we sell to different sales offices or holding companies. In the past it could take staff up to 40 seconds to search for customers in the database. Now, this has been reduced to just five seconds. Order searches have also been reduced from 45 seconds to four seconds, and quote searches have been cut from 45 seconds to three seconds."

"These are all extreme examples, but from our post-implementation analysis, it is very clear that the overall performance of the system has improved five fold," adds Kiernan.

Significantly Enhanced Order Capacity

The previous system could only run a maximum of 6,000 user sessions. In contrast, the new system can cope with double that amount, ensuring it will easily grow in line with Dell's requirements in the future.

Kiernan says: "We can add additional servers to the cluster which will incrementally increase the number of sessions that we can run in parallel without all the headroom issues that we've seen in the past. With greater capacity for running more sessions across Dell EMEA, we will be able to process more orders, and, with higher performance technology, we'll be able to do it faster."

Real-Time Fault Tolerance Results in Enhanced Business Continuity

To provide the best possible service to its users and ultimately its end customers, Dell's order management system must be available in real time. Kiernan says: "We've got the same kind of IT problems that a lot of our customers have. We have large mission-critical, class-one systems which we can't live without. One of these is our order management system."

Ravi Sundaramurthy, Director of Business Development, Alliance & Channels, Oracle, says: "It can prove costly if a system goes down for a matter of hours or even minutes, because staff are unable to process quotes or manage orders. With the Oracle 10g system, Dell can take down certain machines for maintenance and introduce new servers to the environment while it is still operational. The new clustered system helps ensure that there is no interruption to Dell's mission-critical business processes."

Kiernan adds: "We now have real-time fault tolerance and real-time switch over in the event of failure. If a single frame on the original system went down, the whole system was down until it could be replaced.

"In this environment, if one server goes down, the users can move seamlessly to one of the other servers in the farm and we can take the faulty machine offline and replace it. The real beauty of the system is that we can provide true fault tolerance in real time as opposed to near-real time."

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