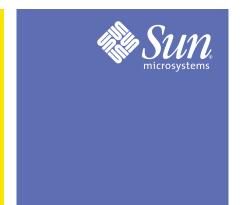# Defense Manpower Data Center, Department of Defense

Migrating from Mainframe to Sun Solaris Saves Taxpayers $10 Million Annually

Key highlights

Industry/Market:
Government Agency

Applications/Solutions
- Modernize large legacy system to manage benefits for U.S. military

- Migrate existing CICS/AION applications to high performance, cost-effective IT system

- Provide a scalable, cost-effective platform for future growth

Products/Services
- Sun Enterprise™ 10000 (Starfire™) servers

- Solaris™ Operating System

- UltraSPARC® processors

- Sun™ Mainframe Transaction Processing software

- SunSoft WorkShop™ for C

- Sun Services Sun MTP Product Consultation/Mentoring

- Sun Services Custom Security Package Design/Implementation

Key Business Challenges
- Improve performance and user access to data

- Implement new IT capabilities with ease and minimal end user disruption

Key Business Results
- Savings of $10 million in hardware costs

- Seamless migration to cost-effective UNIX® environment

- Faster performance on Sun system

"When we rehosted our application on the Sun system, the purchase price was significantly less than a mainframe and the computing power was larger. Sun's technology allowed us to move a majority of our legacy applications seamlessly to the new platform." – Bill Boggess, Chief of the Access & Authentication Program, Defense Manpower Data Center, Department of Defense

Modernizing the health information management system for 2.4 million U.S. military personnel and their families had become necessary for the Defense Manpower Data Center (DMDC). More than 25,000 registered users in the global Department of Defense (DoD) community relied on the IT system for enrollment information, eligibility and benefits coverage verification, immunization records, referral authorizations, reports to primary care managers and additional healthcare information. After years of adding new information requirements, tasks, capabilities, and CPU cycles, the mainframe system's operating costs had grown to more than $15 million per year.

Government officials felt the system was too costly; their goal was to reduce the cost of the outsourced IT function and more easily implement new features and capabilities, so that as IT needs grew and changed, the expense would not be prohibitive. DMDC and EDS, which operates the IT system for DMDC, first analyzed the specific application – the Defense Enrollment Eligibility Reporting System (DEERS) – and the IT environment to determine whether any cost-savings were possible with the same environment. When this analysis showed that there was no way to significantly reduce costs by staying on the mainframe, DMDC and EDS sought an alternative. DMDC chose the Sun Mainframe Transaction Processing (Sun MTP) software to migrate the existing legacy application without change to a Sun Enterprise 10000 server, and gained a high performance, stable, and more cost-effective environment.

Sun Provides Experience and Economy
Sun was already a trusted supplier to DMDC, so a Sun solution provided a familiar and manageable environment, making the systems staff very comfortable, and allowing DMDC to focus on leveraging and building on the existing Solaris experience base. Sun was therefore the obvious partner to work with DMDC and the primary systems integrator, EDS.

When DMDC began the modernization, the IT staff talked with other customers who had migrated applications from mainframes to Sun open systems successfully. Because of positive responses from Sun customers regarding the professionalism, integrity and support from Sun, DMDC selected the Sun Enterprise 10000, the high-end server with the most mainframe-equivalent technology, but without the unnecessary complexity. This Sun server offered close to 75 percent cost reduction over the mainframe. The biggest issue facing DMDC was finding system software that would replicate the mainframe software architecture.

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Complex Migration Runs Smoothly

There was an added complexity to the potential migration – the main logic of the DEERS application was written in AION rather than COBOL – making it necessary to incorporate the artificial intelligence engine to apply the same business rules to the data. Although the AION-based application was developed originally on PCs and Sun servers, it was running on IBM mainframes and had been integrated with the mainframe CICS transaction processing system. The challenge was to de-couple from the mainframe and get the application back on the lower cost Sun platform with minimum change. DMDC formed a joint team of EDS and Sun staff – EDS provided detailed knowledge of the applications and their large relational database and Sun had expertise from migrating mainframe applications at hundreds of other customer sites worldwide. The migration team determined that with the Sun MTP software, moving DEERS to the Sun Enterprise 10000 would not require any significant changes to the application.

"Rewriting the application would have been too costly, take too long, and presented a huge risk of failure," explained Bill Boggess, Chief of the Access & Authentication Program at DMDC. "We decided to reuse the existing mainframe CICS framework and rehost the application to the Sun system. This approach reduced costs significantly and resulted in better performance." The Sun MTP software offered an OLTP engine that supported the CICS API, so DMDC could replicate the mainframe environment and rehost the application on the Solaris operating environment without changes.

There were several components of the project that dictated a phased approach. On the hardware side, DMDC replaced the Hitachi S/390 mainframe with two Sun Enterprise 10000 servers (one main and one backup), with 32 UltraSPARC® II processors each, partitioned across the application and database domain, running the Solaris Operating System. A large 300 GB Oracle7 database was migrated to Oracle8i to reside on the new Sun system. The DEERS application was migrated to the Sun MTP environment in incremental amounts, with thorough planning and testing for each segment. In addition, special DoD requirements called for a custom security system, which was written and implemented by the Sun Services staff, who has particular security experience and expertise.

Taxpayers Win with Large Cost Savings

To be successful with this endeavor, DMDC had determined that they had to achieve significant cost savings, obtain the same performance or better, and not affect users, except to provide better performance.

Compared to the mainframe, the Sun environment and Sun MTP software has enabled DMDC to reduce the cost of ownership by nearly 75 percent, saving taxpayers $10 million each year.

The results have met DMDC's goals. In addition to the cost of ownership reduction, DMDC has achieved a rapid return on investment and the ease of the migration insured that no users felt any disruption in service. There was minimal training required for the EDS operations staff, which still operates the DEERS system on the new hardware and software.

The DEERS system now runs two million transactions per day, during the peak hours of 10 am to 6 pm EST, serving more than 25,000 active users and providing important information to ensure that U.S. military personnel and their families receive health care services when and where they are needed.

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