

Performance Case | Data Center Consolidation & Modernization



1616 Anderson Road, McLean, VA 22102
703.286.0840 (Phone)
703.563.9387 (Fax)
info@conceras.com (E-mail)

www.conceras.com

Key Highlights

Customer

CHALLENGE

The Department of Justice (DOJ) Client faced two major problems: budget constraints and demand for increased information technology (IT) capabilities.

SOLUTION

Conceras was solely chosen by the Client's Chief Information Officer to technically lead the full enterprise architecture migration from Sun SPARC servers to a modernized, lower cost, commodity, and virtualized computing approach running Red Hat Enterprise Linux (RHEL).

BENEFITS

- Substantial cost savings of 54 percent over three years
- Reduced physical space constraints and lessened utility consumption: data center rack space reduction 18:1; power and cooling reduction 2:1
- Rapid, automated provisioning reduced server deployments from hours to minutes
- Application performance increased 80 percent on average
- Improved application uptime and data protection
- Securely provision Linux environments across the system lifecycle, passing stringent Certification and Accreditation policies

The Sun Solaris to Linux migration and overall modernization of DOJ client's IT data center infrastructure reached all aspects of the organization: development, test, verification and validation (V&V), pre-production, and production. Five critical applications on 400+ server environments were migrated over to the new platform in parallel from the existing systems. The staging and testing of the new systems was non-disruptive to 75+ development and testing staff. The migration and deployment required minimal code changes and downtime. The new infrastructure offered superior application performance and uptime for over 300 internal call center staff, analysts, and support staff. In addition, the modernization of IT systems allowed for tighter integration of real-time counterterrorism information sharing with several external upstream and downstream Intelligence Community (IC) agencies.

The benefits to the customer's mission to migrate and modernize to a lower cost, commodity, and horizontal computing approach are enormous. The government has **substantial cost savings of 54 percent over three years** in server and OS costs alone. The new infrastructure greatly improved performance of the client's critical applications by leveraging load balancing of computational workloads. The consolidation of the data centers have **reduced physical space constraints and lessened utility consumption** for 'Green' computing: **data center rack space reduction 18:1; power and cooling reduction 2:1**.

Fully secure and automated provisioning, along with configuration management policies, has reduced the administrative burden for DOJ client's operations and maintenance staff. Conceras has instituted strict VM configuration management to industry standards and processes, creating 'gold' images. Conceras' automated VM provisioning techniques have **reduced server builds and configurations from hours to minutes**.

The new platform tightly integrates with the existing third party application stack, minimizing changes to development. **Application performance increased 80 percent on average**, due to high-speed grid computing, high throughput n-tier network architecture, and tuned OS kernel.

The critical customer mission now runs on superior enterprise architecture for maximum availability and uptime. Conceras' high availability (HA) and disaster recovery (DR) approach has greatly **improved application uptime and data protection**, including the **build-out of a remote continuance of operations (COOP) site**.

A broad range of technologies were leveraged by Conceras on the data center modernization project. Based on our prototyping and technical assessments, the DOJ customer implemented several changes to the infrastructure. A myriad of virtualized Dell servers and blades running RHEL powered the platform for the database, application, and Web tier. We implemented NetApp storage enhancements tuned for the new environment. Conceras designed an N-Tier Cisco network approach for grid computing and fault tolerance. Conceras deployed several technology suites that streamlined and automated lifecycle management and centralized auditing, including: Red Hat Satellite Server, Guardium, Syslog NG, CiscoWorks management framework suite, Resource Manager Essentials (RME), Cisco Access Control Server (ACS), and EM7.

Conceras employed RHEL Kickstart technology to **securely provision Linux environments across the system lifecycle**. The DOJ custom Kickstarts are configuration files on how to configure, secure, and tune Linux using various scripting languages. Conceras researched guidelines from National Security Agency (NSA), Defense Information Systems Agency (DISA), and universities to fully secure Linux.