

# SUCCESS STORY

## Modernizing a Federal Law Enforcement Agency's Legacy Applications and Systems to a Cloud-based Environment using DevSecOps Principles



Simplifying IT



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### Background

This federal law enforcement agency is dedicated to reducing violent crimes, criminal organizations and acts of terrorism. They assist other government organizations, both domestic and international, to prevent crime and violence through enforcement, regulation, outreach, and training programs.

**Executive Summary:** As part of the new technical direction for all enterprise architecture, this agency needed a modernized, cloud-based approach with built in efficiencies. To meet these modernization demands, 1901 Group built a CI/CD and DevSecOps framework, refactors applications for cloud-readiness, and employs elastic engineering for cloud monitoring and optimization. Our work saved this agency 20% on their cloud infrastructure costs.

### Challenge

The agency needed to improve the stability, performance, and maintainability of their infrastructure, databases, systems, custom applications, commercial off the shelf (COTS) products, and operations. Our customer had major modernization goals to upgrade their IT services including migrating all services from their on-premise data center to a hybrid cloud as a service environment and eliminating aging, expensive hardware dependencies. They needed to replace other legacy IT components to modernize the entire infrastructure to a cloud-based environment, including legacy databases, custom middleware, and aging COTS products with costly dependencies.

In addition, our customer wanted to move from traditional application development and management to an agile framework with automated code build, test, and deployment. With this new environment, our customer required effective cloud management tools to enhance transparency into the environment, optimize compute and costs, and continually monitor the hybrid environment.

### Solution

1901 Group is migrating this agency's services from their on-premise data center to a secure hybrid cloud in AWS and Azure. We are refactoring databases, data access code, application code, and application architecture to eliminate dependencies on aging hardware and proprietary software. To replace legacy databases and middleware, 1901 Group is architecting and

deploying SQL server databases into the cloud environment and integrated Red Hat Enterprise Linux and JBoss EAP, enabling less expensive, more secure, and cloud-friendly technology. We also refactor custom software to eliminate legacy performance and functional defects.

1901 Group assessed the agency's 44 mission-critical applications, identifying 19 that were cloud-ready, which we then migrated to the new cloud environment immediately. 1901 Group is refactoring, replatforming, and rehosting 25 applications using a containerization strategy for multi-cloud environments. We built a full-stack DevSecOps environment with a continuous integration continuous deployment (CI/CD) pipeline using the agency's existing components. We deployed a RedHat OpenShift bundle, providing an automated containerized environment for their applications to cloud-enable complex legacy applications.

To effectively manage the cloud platform, 1901 Group deployed a comprehensive dashboard with reporting and system controls so our customer can view the entire hybrid cloud environment. We also implemented self-service, automated cloud resource request capabilities to decrease the time needed to create or change cloud resources. We configured our elasticity engineering to automate reporting and continuously optimize system performance and cloud resource costs.

## Results

With the new cloud environment, DevSecOps and CI/CD framework, and 1901 Group's efforts to migrate both cloud-ready and non-cloud-ready applications, our customer has a modernized framework enabling cloud-based and open source applications and systems **which significantly reduce application operating costs up to 40% annually**. Our work allows this law enforcement agency to exit its current data center, complying with federal mandates, allows the physical space to be converted back to offices, and reduces server operations and technology refresh costs over time. Once we began migrating their applications to the cloud, our elastic engineering approach saved our customer **20% of their infrastructure costs, as we identified and remedied areas of overprovisioning**.

In addition, this agency now has a significantly improved security posture by using approved STIG'd operating system images and rehosting applications onto them with as little modifications as possible.



## About 1901 Group

1901 Group, a wholly owned subsidiary of Leidos, is a leading provider of innovative IT services and solutions in the public and private sector market that delivers improved service delivery by leveraging our FedRAMP authorized Enterprise IT Operations Center (EITOC) to provide 24x7 support of end-users, complex IT infrastructure environments, and mission-critical systems.

“As agencies are starting to embrace the cloud, we are excited to bring an innovative model to a growing federal IT modernization challenge.”

**Paul Wilkinson**

EVP, Corporate Strategy and BD

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