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CLOUD MIGRATION POWERS HHS OIG EFFICIENCY LEAPS

EXECUTIVE SUMMARY

The HHS OIG's technical infrastructure was stressed by costly operations bills, complexity, and a disjointed customer experience. While the federal agency had begun utilizing cloud services, it had not yet completed a full modernization of its systems. DMI was contracted to bring its end-to-end, human-centric expertise to the agency's modernization effort. Alongside Amazon Web Services (AWS), DMI created a suite of user-validated products residing on a hybrid-cloud infrastructure, with built-in security and compliance. This new, secure platform increased agency operational and mission capabilities, reduced support cost, and was made to be easily upgradable with future technology.

THE CHALLENGE

LOW EFFICIENCY AND HIGH COST OF OPERATION
Systemic, technical deficiencies within the OIG's business applications development practices and on prem infrastructure required tedious manual activities that lengthened the time to delivery.

SECURITY VULNERABILITIES
Public-facing portals had security vulnerabilities and upload restrictions due to obsolete email submission mechanisms involving manual selection and filtering.

ATO PROCESS RISKS
The size and complexity of the organization's System Security Plan (SSP) led to delays in the Authority to Operate (ATO) process and increased security risks for the OIG.

ABOUT HHS OIG

The U.S. Department of Health and Human Services (HHS) is the largest grant-making agency in the US. HHS systems interface with a wide array of citizens and entities – from individual applicants to states, territories, tribes, and educational and community organizations. The Office of the Inspector General (OIG) is tasked with fighting waste fraud and abuse in the U.S. Healthcare System.

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WHY AWS?

Amazon Web Services (AWS) has helped thousands of organizations migrate to the cloud and modernize their infrastructure and applications. From lower costs to increased speed, migrating and modernizing with AWS helps businesses focus more on core competencies and reimagine how they work and innovate. These organizations benefit from substantial IT costs savings, as well as improvements in productivity, business agility, and operational resilience.

WHY DMI?

DMI conducts extensive user research, defines user personas, analyzes customer journeys and dives deep into the systems, applications and technologies that support legacy solutions. These activities drive a customer-centric product roadmap and an overall architectural strategy that puts constituents and system stakeholders first – at the same time prioritizing security requirements and process efficiency.

THE SOLUTION

The HHS OIG needed not only modernized technical infrastructure but also new processes and approaches that could leverage the efficiencies built into the new tech.

DMI was at the forefront of OIG's transition to Agile development practices that improved efficiency and cut costs. DMI implemented development, security, and operations (DevSecOps) practices that drastically reduced the Time To Delivery (TTD) and make deployments repeatable. This included the design, implementation, documentation, and delivery of a fully-automated Hybrid-Cloud General Support System (GSS) that was utilized to move OIG assets and capabilities to the cloud securely and reliably.

DMI also implemented two end-to-end automation pipelines for the CI/CD process (one for the legacy systems and another for the modern systems) and developed numerous cloud-specific systems and capabilities to directly support the OIG's business needs.

The new architecture optimizes the application migration capability-as-a-service that is offered by AWS using AWS's Application Migration Service (AMS) and Database Migration Service (DMS). The HHS OIG migration leveraged these two services to move on-prem infrastructure to the cloud. When the AMS agent began analyzing and discovering applications, it provided a dependencies list to be resolved before the migration process began (see diagram below). Both services (AMS and DMS) deploy AWS resources in two different availability zones and create read and write replicas for databases.
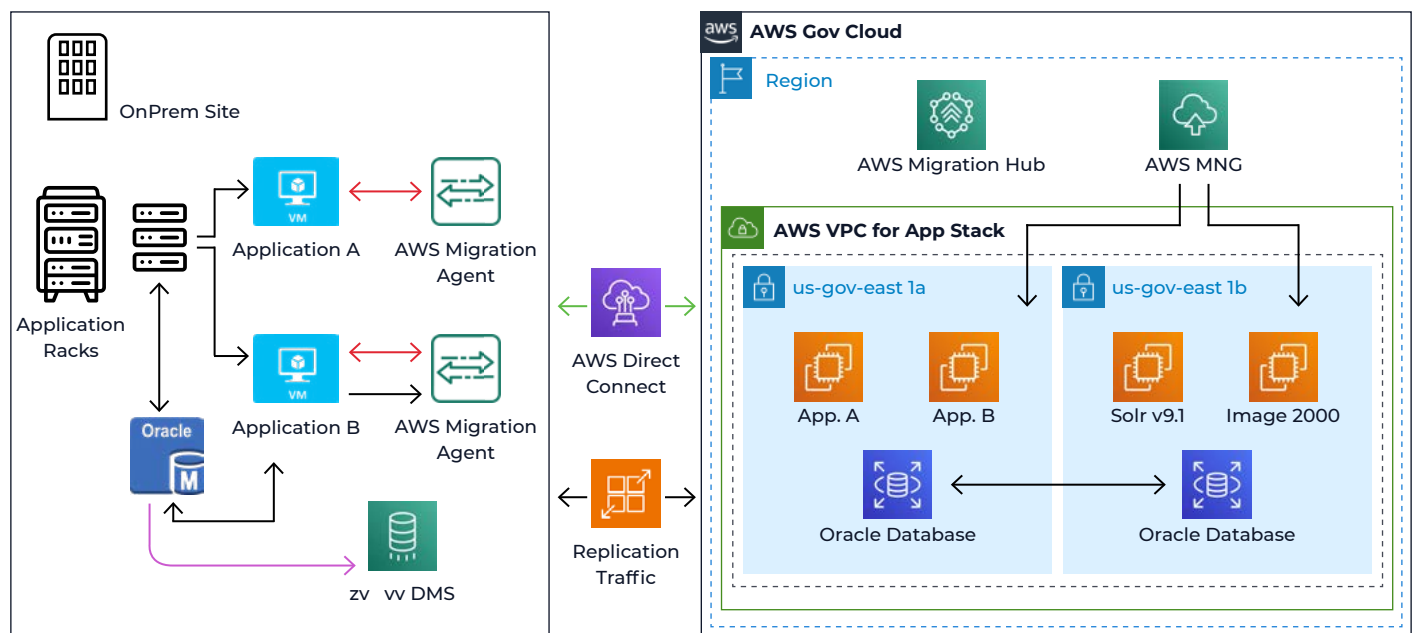
> *"DMI has provided exceptional quality to our 1,800 users overseeing approximately $1.3B in federal spending. They have delivered a hybrid-cloud platform utilizing modern cloud technologies from Amazon Web Services. This infrastructure now hosts our Integrated Data Platform (Data Visualization, Warehouse, Governance), our Mission and Business Support Platform and our Public Engagement Platform."*

HHS OIG CONTRACTING OFFICER

RESULTS AND BENEFITS

HHS OIG now has modern applications and a cloud-enabled approach that can securely meet constituent demands today and for years to come. The applications are now ready to utilize all cloud offerings, including elasticity, managed services, and serverless technologies.

33% REDUCTION

Migrating to the AWS Cloud – along with prioritizing a customer-centric approach to application modernization – enabled the organization to realize a 33% reduction in monthly IT operations costs.

235 SUCCESSFUL RELEASES

In leading the OIG's transition to Agile, DMI helped the organization achieve an unprecedented level of efficiency, addressing – in the last three years alone – over 2,000 stories and resulting in 235 successful releases. Knowing the tight integration required for the CI/CD pipeline, DMI helped the agency design a standardized deployment process to the Dev, Test and Production environments.

50+ ONBOARDED APPLICATIONS

DMI developed and onboarded over 50 major and minor applications and services, including Extract, Transform and Load (ETL) tools such as Looker and Nifi for use in the Chief Data Officer's major dashboard initiative – as well as Office of Information and Technology-wide tools such as Apache Airflow for scheduling and monitoring workflows.

30 min REDUCED FROM 4 TO 8 HOURS

The elasticity within the AWS Cloud is already generating benefits for the organization. Composing business infrastructure for new projects used to take days but can now be accomplished in hours. By incorporating test automation into the deployment process, the post-deployment validation activities have been reduced from 4 to 8 hours to 30 minutes.

3PAO CERTIFIED

DMI helped to secure agency authorization of a Third-Party Assessment Organization (3PAO) certified Hybrid-Cloud General Support System (GSS) and Authority to Operate (ATO) for two applications in less than one calendar year.

INCREASED OPERATIONAL EFFICIENCY

Armed with an interactive migration guide and automation tools, the agency has optimized costs and gained operational efficiency and flexibility with high-availability deployments and fault tolerant systems. Employees can now produce working code faster, at higher quality, and at lower cost, all within a more secure environment that stays continuously aligned with the organization's mission.

The HHS OIG's comprehensive modernization and migration has not only transformed the organization's processes, but it has also advanced the scalability of its applications and made supporting and securing its IT infrastructure more cost-efficient.

NEXT STEPS

Now that HHS OIG's critical application stack is operating in the AWS Cloud, the agency is ready to take advantage of all the powerful and emerging technologies available to government entities – including IoT, Data Analytics, AI and Automation.

The organization is also equipped to quickly deliver business solutions and products that advance its mission in a cost-effective, efficient way – all on an IT foundation built for a new era of growth and success.

BUSINESS BENEFITS

COST SAVINGS & INCREASED EFFICIENCY

HHS OIG is now seeing cost savings and increased efficiency across the board – in its daily operations, system maintenance, and security programs.

READY FOR THE FUTURE

HHS OIG now has modern applications and a cloud-enabled approach that will greatly enhance the organization's ability to advance its mission today and for years to come.

RENEWED FOCUS ON CONSTITUENTS

HHS OIG now has a continuous delivery-as-a-service platform that allows its developers to release code quickly and securely. The result: the organization is better able to focus on serving its constituents.

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