Capabilities
Briefing

Optimoz

CLIENTS

U.S. Citizenship and Immigration Services

NASA

Transportation Security Administration

MARYLAND JUDICIARY

PARTNERS

aws partner network

Advanced Consulting Partner

Public Sector Partner

Solution Provider

Google Cloud Platform Partner

apigee

Red Hat **ADVANCED** **BUSINESS PARTNER**
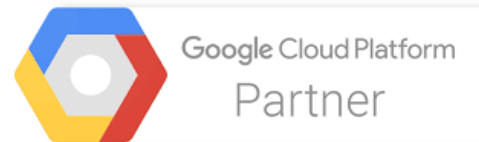
Microsoft Partner

WHAT WE DO

We solve our clients' the most difficult Cloud Engineering challenges imaginable. We provide the leadership, experience, processes, technical know-how, modernization know-how, and focus on enterprise value necessary to make operating your business in the Cloud successful.

OUR SERVICES

Our services cover every stage in the Cloud Engineering lifecycle and are delivered through four, connected practice areas:

- **Cloud Strategy**: We work with your enterprise to build a workable, affordable, high performance Cloud strategy to migrate your core applications and data to the Cloud.
- **Migration & Modernization**: We lead the effort to transform your outdated, hard-to-maintain on-premise systems into modern, secure Cloud environment that will improve your productivity and business agility while lowering IT costs.
- **Advanced Application**: We work with your technical team to build new advanced Cloud applications that are high performance, low cost in operation, and easy to maintain and enhance.
- **DevSecOps**: We implement DevSecOps, CI/CD, and automated security practices to supercharge application development, improve quality, and streamline the performance of your technology team.

OUR EXPERIENCE AND EXPERTISE

Our clients include large federal agencies such as DHS and NASA, state governments, and mid-to-large sized corporations. We are an AWS Advanced Consulting Partner and RedHat CCSP Advanced Partner and have worked extensively with all of the major cloud providers: AWS, Google Cloud, and Microsoft Azure. We have extensive knowledge of and experience with the new techniques and tools that make modern Cloud application development possible and desirable, including:

- Microservices and API architecture
- Containers and container management
- Integrated event-driven security approaches
- OpenShift, Kubernetes, apigee
- DevSecOps tools and Agile processes

- CI/CD tools and processes
- Application performance management
- Public, private, OpenStack, & hybrid cloud deployment

OPTIMOZ, INC.

DUNS: 080087548 | CAGE Code: 7J1E1
GSA Schedule 70 Contract #47QTCA18D00HM
NAICS:541511,541512,541513,541519,518210
Minority Owned Small Disadvantaged Business
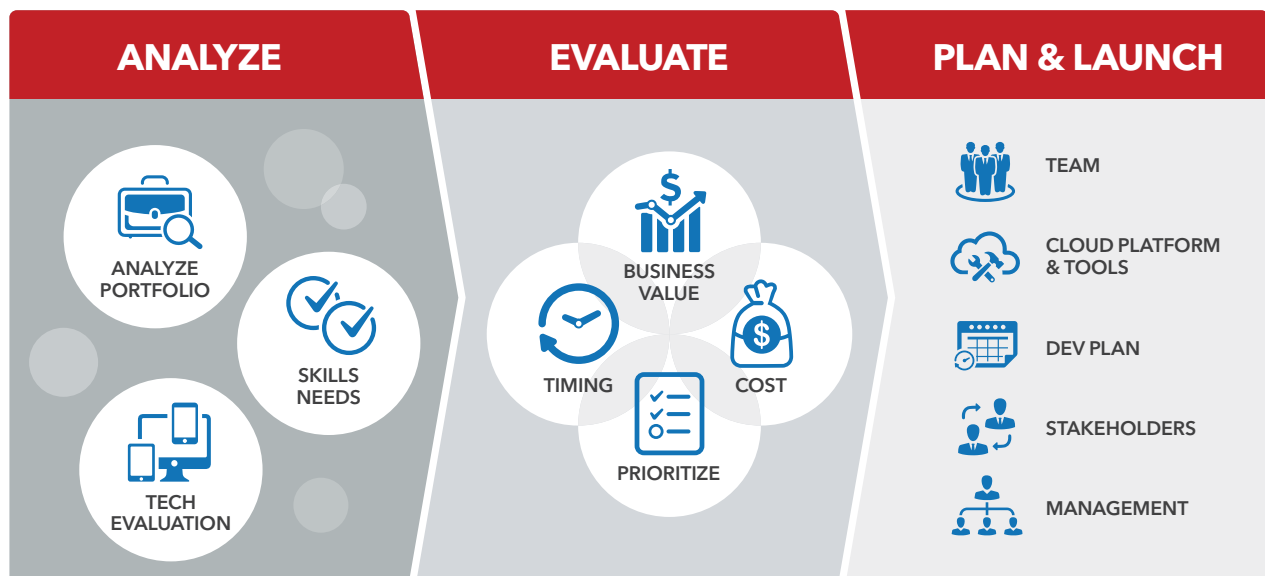Email: modernization@optimoz.com
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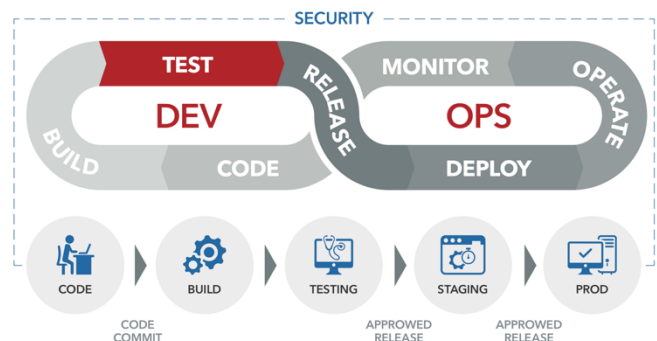
CLOUD STRATEGY

The Cloud Strategy Challenge

Your executive team and senior technologists believe that it's time to move your enterprise's key applications and data to the Cloud. Now you need to figure out how to get there. You need to create a strategy that you can afford, will generate some quick wins, and is sustainable over time. To get started, you need to find the answers to a number of important questions:

- In their current state, can your core applications will operate effectively in the Cloud?
- If not, how do I get them up to speed?
- Do I refactor, build new, or buy a commercial application?
- What is involved in migrating and modernizing an application to run in the Cloud?
- In what order do I move my applications and data to the Cloud?
- Can I afford to move to the Cloud?
- Do I have the right people and skills internally to manage a Cloud transformation and operate in the Cloud going forward?
- How do I get my team up to speed?
- What's the Cloud vendor landscape?
- Which Cloud platform is right for my enterprise?
- Which tools should I use for application development and operations?
- How should I manage my data in the Cloud?
- How do I manage both my technical team and stakeholders across the enterprise during a Cloud transformation?
- How do I define success?

ANALYZE	EVALUATE	PLAN & LAUNCH
ANALYZE PORTFOLIO	BUSINESS VALUE	TEAM
SKILLS NEEDS	TIMING / COST	CLOUD PLATFORM & TOOLS
TECH EVALUATION	PRIORITIZE	DEV PLAN
		STAKEHOLDERS
		MANAGEMENT

Defining Your Cloud Strategy

At Optimoz, we work with your enterprise to build a comprehensive strategy that outlines whether, when, and how to move your core applications and data to the Cloud. The key elements of the strategy include:

- **Application Audit** – to identify the applications are close to Cloud ready versus needing the most work and, therefore, shouldn't be moved.
- **Refactor v. Rebuild Analysis** – to determine which applications should be refactored for the Cloud versus being rebuilt from scratch or replaced with COTS solutions.
- **Technology Recommendations** – to analyze which Cloud platforms, infrastructure tools, third-party components, data management strategies, and software development approaches are appropriate for your enterprise and for each application.
- **Financial Analysis** – of the costs and benefits of moving your enterprise's IT infrastructure and applications to the Cloud.
- **Human Capital Analysis** – to identify skills gaps and needs to support a Cloud transformation over a 3 to 5-year timeframe.

The result is your **cloud transformation plan**, which provides a comprehensive, multi-year roadmap for moving your enterprise applications, data, and infrastructure to the Cloud.

MIGRATION & MODERNIZATION

The Continuous Modernization Imperative

Most enterprises wait way too long to modernize their core applications and infrastructure and, as a result, accrue significant technical debt and rising costs. The results can be catastrophic – including lower productivity, the loss of key technical talent, and the inability to pivot the enterprise in fast-changing world. Migrating core applications and infrastructure to the Cloud can help an enterprise reverse this trend and become nimbler and more competitive.
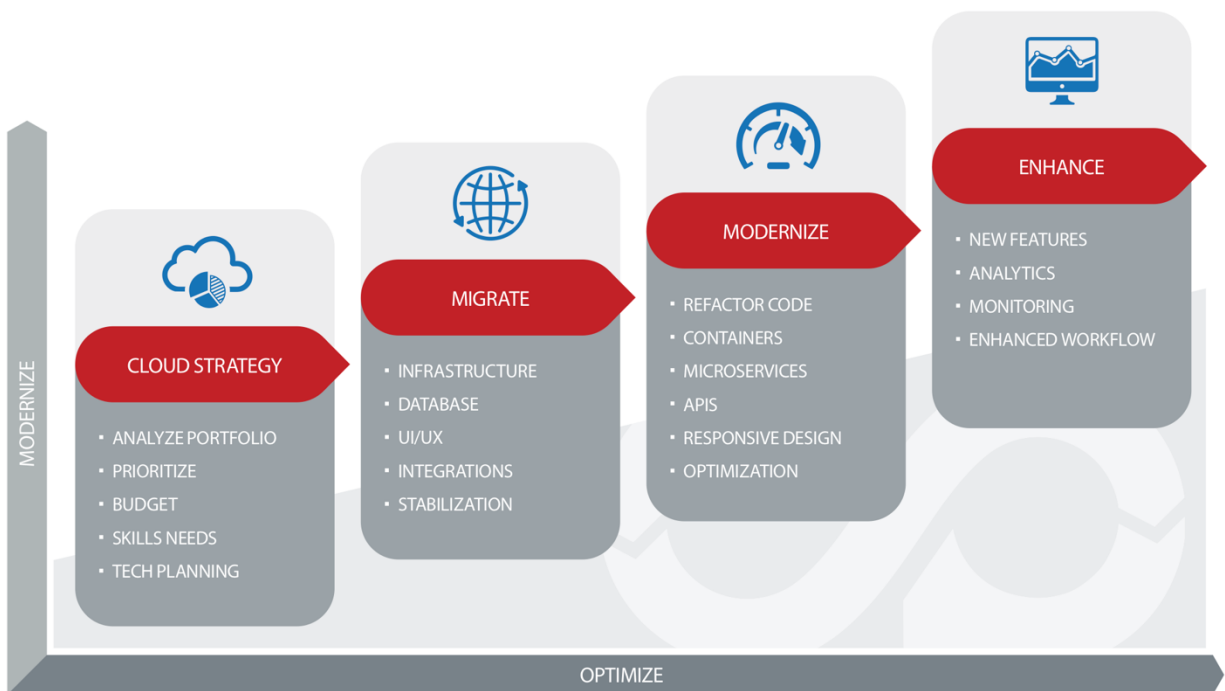
Our Migration & Modernization Approach

OPTIMOZ can help your enterprise migrate and modernize your mission-critical applications to operate successfully in the Cloud. We provide all of the services necessary to execute a successful migration & modernization effort, including:

- **Rapid Assessment** – Execute intensive analysis of your applications and technology platforms to identify the roadblocks to migrating to and modernizing in and Cloud.
- **Application and Technology Strategy** – Examine all of the factors involved in a migration & modernization effort: customer needs, technical challenges, make versus buy decisions, talent needs, level of effort, and costs involved in bringing your application to the Cloud.

- **Technology Planning** – Build a long-term plan to ensure that your team serves the needs of your enterprise by prioritizing features and continuous technical improvements to keep the applications current.
- **Technology Evaluation and Selection** – Select key technologies based on the desired outcome, cost of delivery, skills of the current and desired team, and stakeholder and end-user expectations.
- **Technical Leadership** – for your technology development and IT operations teams, Including:
  - o Working with stakeholders and end-users to identify key application priorities.
  - o Prioritizing work based on enterprise need, ability to deliver, and cost.
  - o Supervising your technology and IT operations teams.
  - o Improving technical and DevOps processes.
  - o Recruiting new talent and train or cycling out underperformers.
  - o Ensuring high-quality, on-time delivery of new functionality.
  - o Working with customers to implement custom capabilities and then managing the process for deciding which features will become standard product features.
  - o Managing the technology and IT operations budget.

- **Application Development** - OPTIMOZ specializes in modernizing enterprise grade applications to operate in the Cloud. We bring best-in-class capabilities in three areas:
  - o **Refactoring code**, infrastructure components, and security throughout the application stack to operate with high performance and reliability in the Cloud.
  - o **Injecting modern software development techniques** to prolong the life and supercharge performance, including microservices that perform specialized functions, APIs to manage data exchange with other applications, and modern analytics approaches to maximize the insight gained from data.
  - o **Integrating open source and commercial software products and components** into the application to improve performance, time to delivery, and upgradability.

- **DevOps, Cloud Security, & Continuous Delivery** – Put in place processes that ensures:
  - o You can deploy new capabilities frequently with high reliability by eliminating bottlenecks in the application development process that can cause delays and decrease application quality.
  - o You implement best-in-class security approaches to ensure that your enterprise, data, and users are protected.
  - o You gain high performance from your applications while operating them efficiently and economically.

ADVANCED APPLICATIONS

OPTIMOZ specializes in building or migrating enterprise grade applications to the Cloud. We bring best-in-class capabilities in five areas:

1. **Refactoring code, infrastructure components, and security** throughout the application stack to operate with high performance and reliability in the Cloud.
2. **Building Cloud applications that scale effortlessly and economically** as user demand and volumes of data increase.
3. **Injecting modern software development techniques** to prolong the life and supercharge the performance, including microservices that perform specialized functions, APIs to manage seamless data exchange with other applications, and advanced analytics to maximize the insight gained from data in the application.
4. **Integrating open source and commercial software products and components** into the application to improve performance, time to delivery, and upgradability.
5. **Embedding modern DevOps, Security and CI/CD processes** from the start to improve time to delivery, reliability, security, manageability, upgradeability, and communication between all members of the software development team.

WHAT WE DELIVER

Our services include:

- **Technology Evaluation and Selection** – In any software development effort, your team needs to make many technology choices based on the desired outcome, cost of delivery, skills of the current and desired team, and market expectations. These choices include:

o Cloud platform approach – public, hybrid, or private
o Cloud provider selection
o Cloud infrastructure components
o Technical tools, including the programming language, databases, analytics and reporting tools, third-party components, such as microservices

We do the research and make fact-based recommendations on the technologies and approaches that will be suit your needs.

- **Application Development** – We put in place and manage software development teams that can get the job done. Our teams typically include application architects, senior and mid-level developers, QA engineers, DevOps, and security professionals. We can either provide a full team to migrate or build a Cloud application or work as part of a blended team – providing specific technical skills and project leadership, as needed.

- **Technical and Product Leadership** – for your product, technology development, and IT operations teams, Including:

o Working with stakeholders and end-users to identify key application priorities.
o Prioritizing work based on enterprise need, ability to deliver, and cost.
o Supervising your technology and IT operations teams.
o Improving technical and DevOps processes.
o Recruiting new talent and train or cycling out underperformers.
o Ensuring high-quality, on-time delivery of new functionality.
o Working with customers to implement custom capabilities and then managing the process for deciding which features will become standard product features.
o Managing the technology and IT operations budget.

DEVOPS

Critical Need

For most enterprises, building and releasing software applications takes too long, costs too much, and doesn't meet the high expectations of stakeholders or end-users. OPTIMOZ enables your enterprise to address these challenges by implementing modern DevOps, DevSecOps, and CI/CD processes:

- **DevOps** combines the software development and operations disciplines to emphasize communication, collaboration, and cohesion between the developer and IT operations teams. DevOps helps an enterprise deploy software more frequently, maintain service stability and gaining the speed necessary for more innovation.

- **DevSecOps** enhances DevOps function by inserting a focus on security into every role and process involved in building, updating, and maintaining applications.

- **Continuous Integration / Continuous Delivery (CI/CD)** is a software engineering approach, where teams work together to produce software in short cycles and then ensure that the software can be reliably released at any time. A successful CI/CD process connects the work of all of the groups involved in software development – product management, architecture, software development, QA, DevSecOps, Operations, and Support. The result is an efficient, repeatable, cost effective, and high-quality set of processes that deliver consistently great applications.
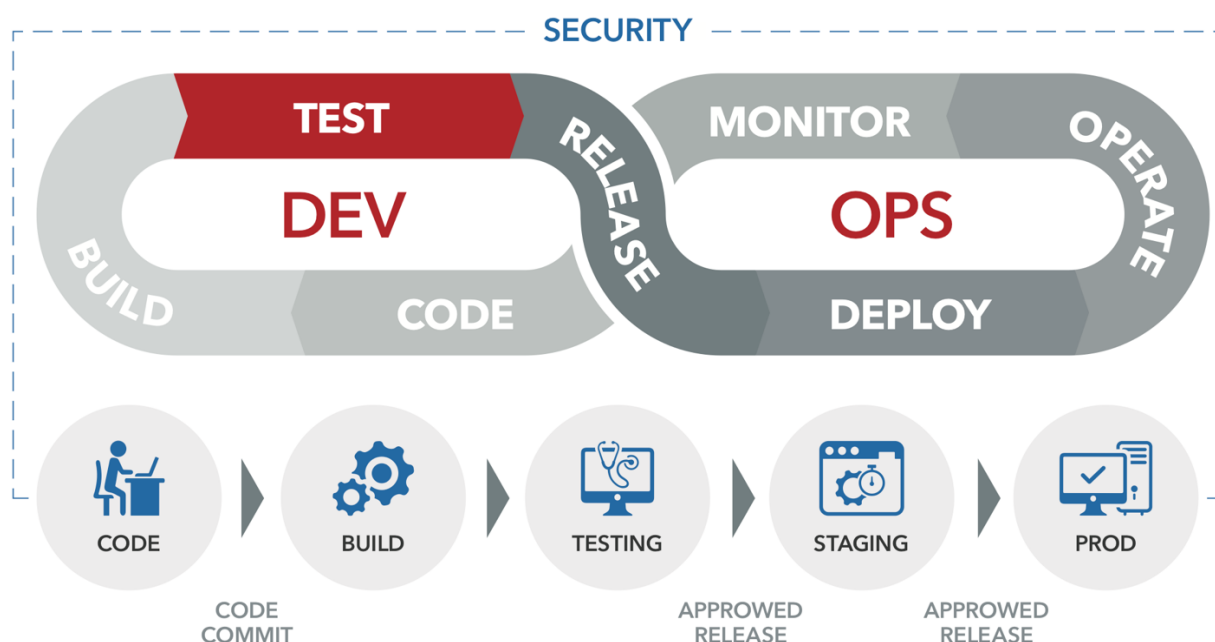
OUR DEVOPS SERVICES

Our DevOps services are all about tying together the people, processes, and technologies involved in delivering an application. Our approach is divided into four phases:

- **Assess** – Establish clear criteria for improving the product delivery life-cycle.
- **Design** – Understand what needs to be optimized to create a competitive advantage in product delivery.
- **Implement** – implement a right-sized DevOps, DevSecOps, and Continuous Delivery process designed around in-house capabilities and needs.
- **Operate** – Create an operational competitive advantage based on repeatability, flexibility, and fast cycle times.

Working with OPTIMOZ, enterprises can combine DevOps, integrated security, and CI/CD to:

- Set and meet expectations
- Measure progress
- Deliver fast results
- Increase reliability
- Improve security
- Lower development and operations costs
- Lower risk
- Create competitive advantage
- Streamline problem resolution
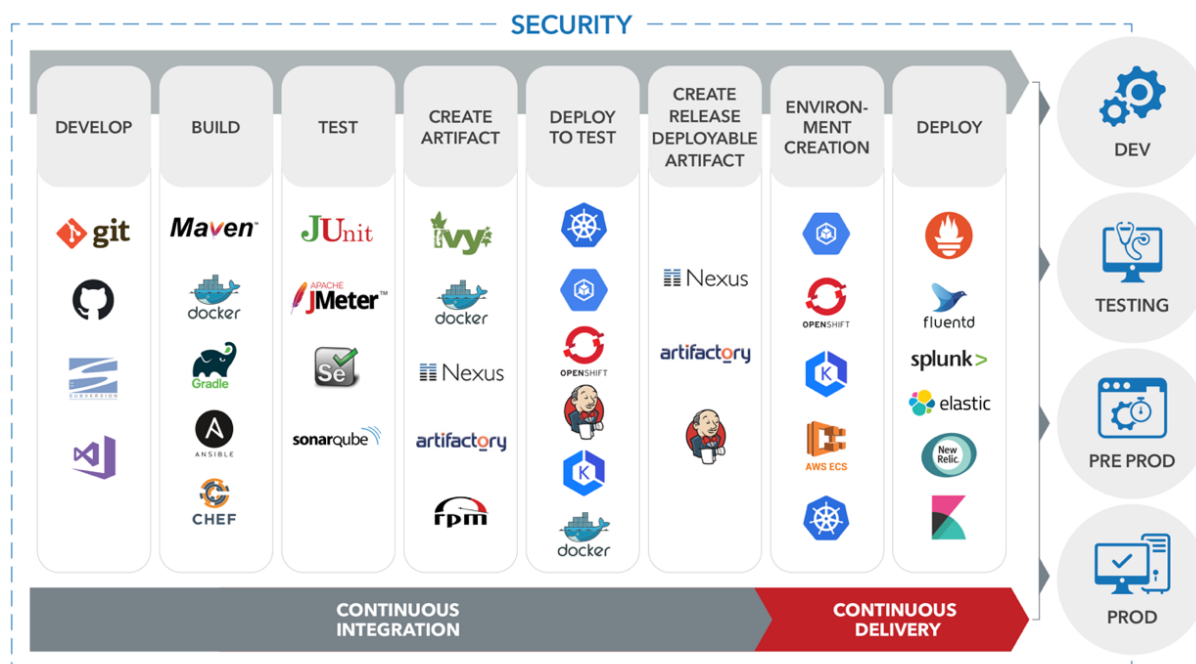
OUR WORK

Working with our partner, Infozen (now Mantech), OPTIMOZ provided refactoring and Cloud migration services for the ELIS application, the core system that manages the daily work of USCIS. Our work included the implementation of CI/CD and DevSecOps processes, accelerated provisioning of cloud infrastructure, and the execution of agile development processes. We leveraged modern software development and DevOps technologies on AWS to deliver a high performance outcome and zero downtime deplyments.

SPECIFIC TASKS INCLUDED

> OPTIMOZ's performance was excellent in an challenging environment.
>
> *USCIS*
>
> OPTIMOZ was a true partner in delivering the high-tech solutions to DHS. The innovation and successful performance was in part due to OPTIMOZ's expertise and dedication. I highly recommended OPTIMOZ for any future work.
>
> *Infozen*

- **Implementing CI/CD processes**, which introduced advanced automation approaches into the software development lifecycle. This included automating build and compile processes, unit testing, smoke testing, and acceptance testing and production readiness. We also enabled early integration of updated components to increase transparency and improve speed in the development process.

- **In conjunction with the CI/CD rollout, developing and deploying DevOps and IT security processes based on industry best practices** to support both software development and IT operations professionals. This allowed the ELIS team to: (1) create true agile environment, (2) enable development teams to collaborate more effectively, (3) increase the code quality, (4) to reduce the time to production, and (5) deploy releases daily, if necessary.

- **Accelerating build-out and provisioning of Cloud infrastructure**, which provided immediate availability of services when needed and scaled down services when not in use. This increased application performance and reliability and lowered operating costs.

- **Implementing agile software development and Kanban principles and processes** to drive faster, more reliable software development for the ELIS application and provide the ability to respond quickly to needs of application owners and users.

- **Leveraging modern applications development, cloud platform, database, and performance management tools to create a modern version of ELIS that is easy to enhance, manage, and refactor as needed**.

- **Employing next generation development and deployment approaches, including microservices, EC2 Container Services, RedHat OpenShift for container management, and Kubernettes for container deployment**.

OUR WORK

Working with our partner, Infozen (now Mantech), we made effective and efficient use of the Cloud and DevSecOps tools to enable NASA to achieve:

- **Transform NASA's IT infrastructure and application services** to operate in the Cloud to better meet evolving stakeholder needs and support mission success
- **Enhance and strengthen IT security** to ensure the integrity, availability, and confidentiality of NASA's critical data and IT assets
- **Identify, test and adopt new information technology** that would make NASA's mission more capable and affordable
- **Provide enterprise resources and processes that support mission success and allow NASA to attract and retain highly performing IT workforce**

WE SUPPORTED

- The video streaming for NASA TV
- The video streaming for the solar eclipse of August 21, 2017, which was the the most watched, uninterrupted live-stream event of all time
- The selection, configuration, and deployment suite of DevOps tools
- The implementation of a serverless application architecture
- The refactoring of NASA's Content Management System to operate effectively in the Cloud

OUR AREAS OF WORK INCLUDED

- **Implementing the Infrastructure as a Service (IaaS),** Platform as a Service (PaaS) and Software as a Service (SaaS) capabilities in AWS for heavily used internal and external web applications and sites.
- **Building Infrastructure as Code (IaC) services to launch infrastructure for clustered environments as a Service.** Our fully automated IaC process allowed NASA to create new environments in an automated fashion as needed. We also enabled NASA to turn off and on environments when not in use to lower AWS costs. We utilized AWS CloudFormation, Autoscaling, Ansible, and Python to develop and setup the Infrastructure as Code processes.

> For NASA, we created an infinitely scalable and manageable environment in AWS that can handle huge spikes in usage flawlessly and economically. Users can now easily access video and data for big astronomical and weather events, and NASA scientists now have a high performance platform for executing most challenging data science projects.
> *Naresh Patel, CEO, OPTIMOZ*

OUR WORK

With our partner, Mantech, we provided IT modernization services to support the refactoring and Cloud migration of multiple applications that manages the daily work of USCIS. Our work fell into four areas:

- **Long-term IT Security compliance through DevSecOps.** Working with USCIS OIT Enterprise Infrastructure Division (EID), we provide enterprise infrastructure support and security services that ensure enterprise information security in accordance with NIST and DHS guidance, as well as USCIS policies and procedures. We also ensure compliance with the Federal Information Security Management Act of 2002 (FISMA) and other federal regulatory mandates to protect USCIS's information technology (IT) infrastructure, resources, and the information used in these environments.

- **Transformation of the USCIS application development methodology from Waterfall to Agile.** We provide the essential support for migrating the USCIS application development methodology from a waterfall process to an agile environment and from a silo-based development-deploy-support structure to an Agile Methodology with a DevSecOps framework, including cloud integration engineering services and the automation of environment builds and patching.

- **Modernize the software deployment process.** We provide Change, Configuration and Release Management services in three areas:
  - o Governance over the processing of all changes to be deployed to or implemented within USCIS operating environment.
  - o Release management governance over deployment activities occurring within USCIS
  - o Management of USCIS enterprise wide configuration management.

- **Introduce leading edge tools and Cloud management processes**. We provided Subject Matter Expertise in: Cloud Computing, Configuration Management utilizing tools like Chef and Ansible, DevOps – Continuous Integration / Continuous Delivery, RedHat OpenShift, Google apigee, MongoDB, Infrastructure automation, Linux/Unix administration, and Data Center Automation.

- OPTIMOZ provides refactoring and cloud migration services for the ELIS application, the core application that manages the daily work of USCIS. Our work included the implementation of CI/CD and DevSecOps processes, accelerated provisioning of cloud infrastructure, and the execution of agile development processes. We leveraged modern software development and DevOps technologies on AWS to deliver a high performance outcome and zero downtime deployments. This represented a first of its kind effort in DHS.

> ❝
> Optimoz is a trusted team member on the SPEDI Program. They bring highly qualified personnel that offer innovative solutions focused on achieving our customers objectives. They are focused on our customer objectives and help us drive a high level of customer satisfaction.
>
> *ManTech*

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