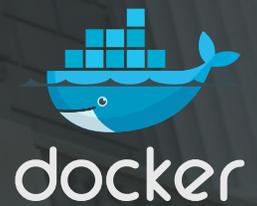


Transforming to Better Government: IT at the GSA with Docker and Booz Allen Hamilton



BACKGROUND

The Government Services Agency (GSA) is an independent agency of the United States government. The GSA supplies products and communications for US government offices, providing transportation and office space to federal employees. Arguably the most important function is to develop government-wide cost minimizing policies and other management tasks. A hallmark of GSA is the Integrated Award Environment (IAE).

IAE is comprised of nine government-wide systems used by grantees and contractors, which manage all government contracting, outside of the Department of Defense. The scope of the IAE is massive: the system manages more than \$1.2 trillion worth of transactions and annually receives more than 500 million page views on the contracting websites and every company that provides services to or does business with the government must register. The site hosts all contracts, fees and documentation managed by GSA's IT systems. These applications provide the business logic that support the government's accounting and budgeting and tracks and reports on contracts and transactions.

CHALLENGES

The IAE is comprised of many interlocking traditional applications with monolithic architectures. This presented a rigid environment with multiple dependencies and architecture became a roadblock to innovation and efficiency:

- The development cycle required to modify and adapt these applications was very long, labor intensive and difficult to manage.
- The traditional applications were using a lot of overhead, even before users tapped into the business logic. In many cases applications were using 60% of a virtual machine with each VM providing the same exact functions for every application.
- The existing development lifecycle exposed GSA to security risks. Configuration drift was common and the attack surface for developers was outside acceptable standards.

THE GSA'S VISION

The Director of IAE led the project to modernize application development and management. The vision was to build a platform of common services and abstract the applications away from the common services. GSA was looking for greater efficiency and effectiveness.

“We are modernizing all of these systems over time and we’re using containerization and infrastructure to modernize these systems.”

– Navin Vembar, Director of GSA IAE

GSA priorities included:

- Taking a cloud first approach: the entire environment needed to run on a FedRAMP FISMA moderate AWS environment.
- Consider open source first: evaluate and try open source for all services in the architecture.
- Small and transportable components: ensure that system components are discrete, reusable and shareable to enable agencies to move from traditional monolithic architecture to a microservices architecture.

GSA believed that containers would provide the capabilities they would need to achieve the vision. Further, by creating a common services platform, all agencies would be able to use these services and components.

To achieve this vision, GSA partnered with systems integrator Booz Allen Hamilton (BAH), a global strategy and technology consulting firm with a long history of partnership with GSA.

BAH offers proven expertise in high-quality IT solutions, dedicated program support, and experience through the GSA regions.

Alliant, the GSA's newest and most versatile contracting vehicle, provides the flexibility required to meet government IT requirements. In partnership with GSA, BAH is committed to making Alliant the premier contracting vehicle across the federal IT market. BAH remains one of GSA's top-five professional industry partners and is focused on Dockerizing the government.

THE SOLUTION

BAH engaged with GSA to quickly analyze the requirements and define the common services platform. Docker Datacenter (now Enterprise Edition) was selected as the platform for standardization to address the integration challenges, reduce operating costs and improve the overall GSA security posture.

The Docker solution for GSA provided several benefits.

- Improved resource utilization: the solution minimizes redundant services on virtual machines and provides for optimal utilization of infrastructure.
- Better app security: by adopting Docker GSA would be able to deliver secure services to multiple agencies at scale and assure a consistent security posture.
- Incremental business value: by providing common services from a resilient and secure platform, developers would spend less time selecting and learning multiple tools and more time developing applications. This translates into greater productivity - with taxpayers as the real winners.

Government agencies, like many corporations, maintain many traditional applications with monolithic architecture. Docker Datacenter was selected because it is just as effective at containerizing legacy applications as it is for developing new applications.

The main advantage for recommending Docker Datacenter [Docker EE] was ease of use including a more manageable environment. Given GSA's time-frame, BAH prioritized implementing Docker, which had already been tested and validated. This eliminated having developers experiment with a variety of readily available but untested tools.

BAH was able to show GSA how easy it is to set up a DevOps workflow.

Docker is self-sufficient, meaning it doesn't require a lot of other tools. Government agencies using Docker find that it is fast and simple. This enabled GSA to provide a fully production ready experience. Highly valued features include:

- Traceability using Docker labels is critical for audits; each image is labeled to identify which container it runs with and the individual that committed the code and approved the merger.
- Automated deletion of an old build as soon as a new one becomes available: once Docker commits a container to the master brand, the SLA for that container is ensured.

Today, GSA continues to evolve their cross-agency DevOps platform. As more capabilities are realized, GSA and all the agencies, will experience improved productivity, lower costs and reduced risk.

ABOUT BOOZ ALLEN HAMILTON

BAH is a respected partner to many government agencies. Their expertise includes enabling agencies to create efficient and effective DevOps teams and the rapid adoption of Docker Datacenter (Docker EE). BAH enables government agencies to utilize all the security features of Docker including new features like secrets management and works with agencies to align Docker to their in-place security infrastructure. Other areas of BAH focus include cloud brokering and multi-cloud management.

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