



CUSTOMER SUCCESS STORIES

Why the US Navy Relies on EDB Postgres[®] AI to Keep Its Critical Services Afloat





CUSTOMER: US NAVY

EDB customer since 2010

CHALLENGE: Due to increasing costs of using Oracle, the Navy needed to migrate crucial mapping and data analysis technology to Postgres. The Navy wanted to save money on IT spend, accelerate its move to the cloud, and standardize its data-analytics database platform across the entire fleet.

REQUIREMENTS: The Navy required a solution that was low cost, easy to use, high performance, reliable, and highly secure.

SOLUTIONS: EDB Postgres Advanced Server (EPAS)

RESULTS: Using an EDB Postgres solution resulted in a significantly lower cost than using Oracle, saving the Navy millions on its IT budget. The move to the cloud will drive systems modernization and provide flexibility as well as support scalability for the future.



OVERVIEW

The US Navy has been relying on EDB Postgres for more than a decade

The US Department of Defense is one the largest IT customers in the world, with a [planned IT spend of approximately \\$21.6 billion in 2024](#). And via the US Navy, the DOD has been an EnterpriseDB customer for more than 13 years.

The Navy, which is the second oldest branch of the US military, does not break out its IT budget—in part because information technology is so integral to its many enterprises. The overall IT spend includes naval projects that directly support the fleet and provide a broad range of essential capabilities, from navigation to cybersecurity to developing and supporting unmanned systems.



As plans were made to migrate mapping and data analysis technology from Oracle to Postgres, the Navy needed a supported, enterprise-grade version of Postgres rather than the community version. The Navy selected EDB to provide that software and support in about 2010 and has been using it ever since.

The Pentagon is currently engaged in a multibillion-dollar Joint All-Domain Command and Control (JADC2) effort to more closely integrate all branches of the military for data, command and control, and real-time mission analysis. Because of the JADC2 initiative, the military branches all have ongoing efforts to modernize and optimize IT systems. That includes the US Navy, with a contribution called [Project Overmatch](#).



Making the leap to Postgres

A geographic information system (GIS) is a key element of many of the systems built by the Navy, and Esri is the dominant provider of this crucial mapping and data analysis technology. Historically, Esri could only work on Oracle. Because high availability is essential for supporting the needs of naval commands, an expensive hot standby configuration was required, which in many cases doubled the Navy's anticipated cost.

Fortunately, Esri had recently introduced support for Postgres, a development that immediately captured the interest of technology decision-makers in the Navy. As plans were made to migrate Esri to Postgres, the Navy needed a supported, enterprise-grade version of Postgres rather than the community version. The Navy selected EDB to provide that software and support in about 2010 and has been using it ever since.

The result was a massive GIS architecture that leveraged the seamlessness between Postgres and PostGIS, the extension that supports storing, indexing, and querying geospatial data.

EDB Postgres is also used elsewhere in the Navy. For example, it provides a relational database for secure data platform frameworks used by Navy personnel every day, in both onshore and afloat environments. Most critically, it supports the Agile Core Services (ACS) system on large-deck Navy ships for command-and-control applications.

Postgres ascends to the cloud

The migration to cloud computing has been a long-standing DOD initiative—one that makes particular sense for the Navy and its distributed shipboard clients around the world. In fact, the Navy [published a memo](#) in 2017 calling for “Cloud First” adoption for any new IT procurement and execution. A secure data platform in a cloud-like deployment is key to providing ships with a common set of services, including EDB Postgres, OpenShift, GIS, Kafka, and more.

Implementing platforms such as ACS is somewhat complex, but the idea is fairly simple: to provide a pipeline of services that everyone can use. ACS has been deployed to the operational environment for about three years, spearheaded by Project Overmatch. The platform currently consists of Postgres instances in virtual machines on ships and fully within the cloud for shore-based commands. Future plans may include a move to a fully orchestrated containerized approach to fit the needs of new applications deployed to the platform.

The Navy continues to be a satisfied EDB and Postgres customer for many reasons, including performant executions of data warehousing workloads, the geospatial capabilities offered by PostGIS, compatibility with Esri, and the resulting ability to meet expectations of the fleet. Because of these successes, the Navy is anticipated to increase its use of Postgres in operational missions around the globe.



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The mission ahead

Outages and data loss are not options for the Navy. As shipboard clients increase their usage of the secure data platform built on Postgres, they need solutions that ensure zero downtime. To support the Navy's real-time access to information, the immediate scaling, recovery, and self-healing capabilities available through cloud-native solutions such as those offered by EDB Postgres for Kubernetes need to be implemented within every facet of the data structure.

The Navy is now requiring the use of containerization to support the platform evolution necessitated by increasing demand for scale and security. Using immutable containers greatly reduces the effort and time required to start up, stop, or add another database to support the rapidly changing needs of the Navy. All new applications within Project Overmatch must be containerized as a baseline architectural principle and then follow a rigid approval process before use in the fleet.

More broadly, the Navy wants to improve ease of use for sailors and sees AI and machine learning as key enablers of this goal. While ships are underway, sailors do not necessarily have the connectivity or time to call for technical support if they encounter a problem with an application or database. Systems that can self-heal and self-maintain are key to the resiliency of the platform in these circumstances, especially because many users are lightly trained in this area.

Given the Navy's long-standing reliance on EDB-supported Postgres, plus the automation and self-healing properties of EDB Postgres for Kubernetes, EDB seems certain to continue in its role in the Navy's ongoing journey to improve fleet mission outcomes.



EDB provides a data and AI platform that enables organizations to harness the full power of Postgres for transactional, analytical, and AI workloads across any cloud, any time. For more information, visit www.enterprisedb.com.

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