

Transforming the Census Bureau's Data Dissemination & Archiving Operations (DDAT)

Modernizing Data for the Nation's Most Trusted Source

THE CHALLENGE

The U.S. Census Bureau manages one of the largest public data ecosystems in the federal government. As the Bureau transitioned from the Cloudera-hosted Census Data Lake (CDL) to the AWS-native Enterprise Data Lake (EDL), it faced two major challenges: establishing standardized, secure processes for archiving and transferring massive data volumes to the National Archives and Records Administration (NARA), and ensuring uninterrupted operations during the migration of billions of data files to the new cloud infrastructure.

Meeting these challenges required advanced cloud engineering, systems integration, and program management expertise—balancing modernization, compliance, and mission continuity across multiple Census divisions and interagency partners.

THE APPROACH

BLN24 engaged early in the DDAT initiative to support the initial phases of the archiving and data transmission operations. Collaborating closely with Census ADSD, Archiving stakeholders, and NARA, the team established data standards, metadata requirements, and secure transfer protocols aligned with federal archiving policies.

Using an agile, iterative approach, BLN24 led the phased migration from CDL to EDL, developing a flexible AWS-native framework to support data ingest, storage, and validation. The team coordinated efforts across Census technical groups and external partners to ensure seamless interoperability and maintained open communication channels for transparent progress tracking and risk mitigation.

QUICK FACTS SNAPSHOT

Agency:

U.S. Census Bureau – Archiving and Data Services Division (ADSD)

Program:

Data Dissemination and Archiving Transformation (DDAT)

Capabilities Demonstrated:

- Cloud Application Modernization
- Systems Engineering & Architecture
- IT Project and Program Management for Transformation

Core Systems:

Cloudera Data Lake (CDL) → Enterprise Data Lake (EDL)

Key Partners:

National Archives and Records Administration (NARA)

Outcomes:

- Defined archival data standards and processes in partnership with NARA
- Developed scalable AWS-native data ingest and transfer framework
- Supported secure migration of billions of Census data files to cloud infrastructure

THE SOLUTION

BLN24 delivered a secure, scalable, and AWS-native data architecture that enables reliable data management, archiving, and transmission for the Census Bureau.

In this project, the team demonstrated the following capabilities:

- **Cloud Application Modernization:** Built infrastructure-as-code (IaC) pipelines to streamline provisioning and data handling across AWS services, including S3 and Lambda.
- **Systems Engineering & Architecture:** Designed modular processes for transferring, storing, and parsing massive datasets within the EDL architecture.
- **Automation and Monitoring:** Implemented automated validation and error tracking to ensure data integrity and accuracy throughout transfers.
- **Archival Readiness:** Supported downstream data delivery to NARA with standardized metadata tagging, version control, and verification workflows.
- **Security and Compliance:** Ensured full adherence to Census and NIST standards for encryption, authentication, and data lifecycle management.

These solutions established a sustainable and extensible cloud-based framework for long-term data dissemination and archiving operations.

THE IMPACT

BLN24's work under the DDAT initiative strengthened the Census Bureau's data infrastructure, enabling a seamless migration from CDL to EDL without operational disruption. The new architecture processes and transfers billions of files securely, improves automation and efficiency, and enhances interagency collaboration with NARA. This modernization ensures long-term sustainability and resilience in managing both historical and operational Census data.

THE TAKEAWAY / WHAT'S NEXT

The DDAT engagement demonstrates BLN24's expertise in **Cloud Application Modernization, Systems Engineering, and IT Program Management for Transformation**. By combining agile execution with technical rigor, BLN24 delivered a secure, cloud-native foundation for Census' data archiving mission. As Census continues advancing its enterprise data initiatives, BLN24 remains a trusted partner in driving modernization, scalability, and innovation—ensuring the nation's most critical data remains secure, accessible, and future-ready.