Pacific Northwest
NATIONAL LABORATORY

U.S Department of Treasury, Amazon Web Services, and PNNL Collaboration

The U.S. Department of Treasury is the preeminent entity in the U.S. Government dealing with financial and monetary issues. As such, its expertise in these areas is bolstered by the vast amounts of financial (and other) data in its holdings.

Data comes in different forms and from different entities.

- The Financial Crimes Enforcement Network collects information from banks when suspicious activities are detected.
- The Office of Terrorist Financing and Financial Crime is home to Treasury Attaches in Embassies abroad who collect and send back information from partner nations.
- The Office of Foreign Asset Control deals with implementing and enforcing sanctions, among other things.

This Treasury power has been used by many Presidential Administrations as an effective and measured approach when dealing with terrorists, nuclear proliferators, drug cartels, rogue leaders, and nations/individuals engaged in abhorrent behavior – some of the better-known aspects of Treasury's mission. However, there is much more to Treasury and its mission, including the excellent research and analysis by the Office of Intelligence Analysis.

The one thing all entities in Treasury have in common is the need for fast, reliable, and easily accessible data.

ADOPTING AWS TECHNOLOGY

In 2019, Treasury leadership decided to give its employees the IT systems, data, and tools they needed to be even more effective in their national security roles. This began with discussions with Congress, Pacific Northwest National Laboratory (PNNL), and Amazon Web Services (AWS). Congress saw the need to augment Treasury's capabilities and authorized funding to modernize Treasury's processes. AWS's role was to get data into a central location so it could be better utilized and where people could leverage AWS tools.

CACHE-ING IN ON A NEW TOOL

PNNL's tasks were more specific. After canvassing the landscape for what Treasury employees needed, PNNL began creating a tool called Cache. With Cache, Treasury employees will be able to search for and integrate needed data to accomplish their mission.

At the same time, PNNL vetted and procured relevant data sets for Treasury's use. This included major financial data sets, including cryptocurrency holdings. Cache allowed these disparate data (with billions of records) to be easily searched. Other benefits to this tool include language translation, multilingual entity extraction, entity linking, record linkage, and graph analytics. PNNL has also been working directly with Treasury data scientists and analysts to provide specialized algorithms and workflows, which accomplishes mission needs while giving current Treasury employees better skills and knowledge.

TRAINING THE NEXT GENERATION

PNNL has also created multiple training programs to build the next cohort of data scientists with experience in this methodology. In particular, the Data Science Training Program and the Distinguished Graduate Research Program were created in coordination with the University of Washington and North Carolina State University, respectively. The goals of both programs are similar – to support data science students who would like to work on real-world problems while gaining their advanced degrees and expose them to national security challenges. Participants in these programs will have opportunities to work on real Treasury challenges and possibly work with Treasury, or other USG entities, in the future as interns or staff employees.

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