

An Open-Source System for Automatic Policy-Driven Collaborative Archival Replication

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Abstract: Verified geographically-distributed replication of content is an essential component of any comprehensive digital preservation plan. This requirement has emerged as a necessity for recognition and certification as a trusted repository. As embodied in Trustworthy Repositories Audit & Certification (TRAC), an emerging ISO standard, and in other best practices, an organization must have a managed process for creating, maintaining, and verifying multiple geographically distributed copies of its collections in order to be fully trusted.

The LOCKSS (Lots of Copies Keep Stuff Safe) system has been widely adopted by libraries and archives for replication and preservation. As a collaborative effort of Data-PASS partners (ICPSR, Roper Center, University of Connecticut, Odum Institute, and IQSS), the SafeArchive system is being developed to extend LOCKSS capabilities by making distributed replication easier for curators and automating compliance with formal replication and storage policies. This innovation provides the auditability and reliability of a top-down replication system with the resilience of a peer-to-peer model.

The poster provides an overview of the SafeArchive system and describes how a curator can use the tools to generate an archival policy schema and monitor compliance. Also, the poster details the technical implementation of the SafeArchive system including the policy schema, how information used in the auditing process is obtained from a set of LOCKSS peers without modifying the LOCKSS trust model or configuration, and the organization of SafeArchive software components.

About the authors:

Jonathan Crabtree is the Assistant Director for Archives and Information Technology at the Odum Institute for Research in Social Science at the University of North Carolina at Chapel Hill. The Institute's social science data archive is one of the oldest and most extensive in the country. As assistant director, Crabtree completely revamped the Institute's technology infrastructure and has positioned the Institute to assume a leading national role in information archiving. His current efforts include working with the University of Michigan, the Harvard-MIT Data Center and preservation partners across the country to create a national preservation strategy for social science data and develop policy based auditing systems for LOCKSS based preservation systems.

Crabtree's twenty years of experience in information technology and networking as well as his engineering background bring a unique perspective to his current role. Crabtree joined the Institute seventeen years ago and is responsible for designing and maintaining the technology infrastructure that supports the Institute's wide array of services. Before moving to the social science side of

campus he was an information systems technologist for the University of North Carolina at Chapel Hill School of Medicine. His grounding in medical information technology adds to his education and training in electrical engineering, library and information science, digital preservation, computer science, economics, geographic information systems, hydrology and geomorphology.

Thu-Mai Christian is currently pursuing a Master of Science in Information Science degree with a concentration in archives and records management at the School of Information and Library Science (SILS) at the University of North Carolina at Chapel Hill. As part of her graduate program, she holds a graduate research assistantship with the Odum Institute's Archive Services under the direction of Jonathan Crabtree. She also serves on the Provost's Task Force for Research Data Stewardship.

Prior to entering the SILS Master's program, Christian spent three years working for the Odum Institute as a research project coordinator to provide data management support for the survey group and the Citizen Soldier Support Program. She also holds a Master of Arts degree in art history from the University of North Carolina at Chapel Hill.