CHANGING PRACTICES IN FIXITY

Results from the 2021 NDSA Fixity Survey

Nick Krabbenhoeft
New York Public Library
United States of America
nickkrabbenhoeft@nypl.org

Carol Kussmann
University of Minnesota
United States of America
kussmann@umn.edu

Sibyl Schaefer
University of California San Diego
United States of America
sschaefer@ucsd.edu

Patrice-André Prud'homme
Oklahoma State University
United States of America
pprudho@okstate.edu

Katherine Fisher
Emory University
United States of America
katherine.fisher2@emory.edu

Abstract – Beyond the encouragement to check fixity, the field of digital preservation does not have a best practice on how to verify the stability of digital collections. Fixity verification is a contextual practice that is implemented differently at every organization. This poster presents the results of the 2021 NDSA Fixity Survey to better understand fixity practices at cultural heritage organizations.

Keywords – Fixity, Survey, Workflow

Conference Topics – Scanning the New Development, Building the Capacity & Capability

I. INTRODUCTION

Fixity verification is a core digital preservation practice. It is also a practice that varies greatly from organization to organization, and even between collections within an organization. Resource availability, technical capacity, and infrastructure choices are among the many factors that may impact a given institution's fixity practices.

The results of the 2021 NDSA Fixity Survey are a snapshot of fixity practices. They build on the results of a similar survey carried out in 2017 and offer a longitudinal view of how practices are changing.

II. WHAT IS FIXITY PRACTICE

Fixity is the property that a file is unchanged over time. There are multiple mechanisms to check this property, each with their own degree of reliability. The 2021 Survey captures any information that an organization may choose, such as file manifests, 0xums, or cryptographic hashes. Once recorded, these pieces of fixity information can be compared to newly generated versions at some point in the future to verify the stability of the file.

The 2021 Survey documents 4 areas in which organizations makes choices in fixity practice.

- What types of fixity information do organizations use and at what point do they have it?
- What factors trigger a fixity verification, such as collection size, events, schedules, or collection types?
- How does cloud storage impact fixity practice?
- How do organizations respond to fixity verification failures?

III. LONGITUDINAL RESULTS

A key concern of the 2021 Survey was to provide a longitudinal analysis of fixity practice by comparing it to results from the 2017 Survey. The

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increasing size of digital collections, complexity of acquisition streams, number of organizations managing digital collections, and prominence of cloud infrastructure is expected to play a large role.

Whenever possible, survey items were carried over from the 2017 Survey to the 2021 Survey. Additional items were added in response to analysis of the 2017 results, such as greater detail in event-based fixity verification and the section on responding to fixity verification failures.

IV. Survey Response

The 2021 Survey was conducted May 19, 2021 to June 20, 2021. In total, it received 116 responses, a 30% increase over the response the 2017 Survey's 89 responses.

In terms of international representation, the majority of responses came from countries where English is a common language: United States (72), United Kingdom (23), Australia (6), Canada (6), Ireland(1), New Zealand (1) and Singapore (1), representing 93% of the total response. The remaining 5 responses came from Austria (2), Denmark, Finland, and Germany.

This bias towards towards institutions with English-speaking practice is unsurprising since the text of the survey and the survey announcements were in English. Still, it means that the results cannot represent fixity practices in much of Europe, Asia, Africa, and South America.

V. Conclusions

The full results and analysis of the 2021 Fixity Survey are forthcoming and will be available for download from the NDSA in Fall of 2021. Monitoring the stability of digital collections is a fundamental task of digital preservation. The growing complexity of collections and number of organizations holding digital collections increases the amount of practical knowledge and approaches to accomplishing this task. Continued survey work will be necessary to document and understand fixity.