White paper

Exploring new ways to streamline the transfer of permanent electronic records from government agencies & departments to the Archives

4 new options for electronic records transfers



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Introduction

Public records are one of the cornerstones of democracy. They contain essential evidence of the decisions, actions, and consequences of government agencies and officials, and are the primary vehicle through which they are held accountable by its citizens.

The increasing volume of long-term and permanent government records in digital form (both digitized and born-digital) opens new opportunities to serve citizens more efficiently by providing online access to self-service portals and faster handling of requests.

However, ensuring the long-term integrity, readability and trustworthiness of digital records requires a coherent strategy for digital preservation and records transfers – across and between state agencies, departments and Archives.

MoVE-IT Report

In 2021 CoSA (The Council of State Archivists) with support from Preservica and AVP published the MoVE-IT report (Modelling Viable Electronic Information Transfers).

The report explored several real-world transfer examples to highlight the people, process and technology challenges of transferring permanent archival records from the custody of state agencies and departments to the state archives for trusted long-term digital preservation.

Since publication the landscape of software and technology used across government has changed significantly, most notably the adoption of Microsoft 365 and the migration of legacy content into Microsoft SharePoint. At the same time records capture and digital preservation technologies have also rapidly advanced to provide new faster and more automated options for transfer.

In addition, new ways for state archives to promote and support the adoption of digital preservation across all levels of government are now also available. These enable agencies to ensure long-term (> 7 years) and permanent records that are not required to be transferred or are being retained prior to transfer to be digitally preserved "in-place" to ensure records are maintained in readable formats aligned to state preservation policy.

The aim of this paper is to enable government organizations to explore and evaluate these new options for simpler, more secure and more automated ways to transfer and digitally preserve electronic public records.

New options for records transfers and digital preservation "in place"

The MoVE-IT report highlighted the need for a choice of solutions for transferring electronic records to accommodate varying processes as well as differing size and frequency of transfer. Simplicity and standardization were also highlighted, especially since non-archival and non-technical agency staff are often involved in the transfer process.

By building on the findings of the MoVE-IT report and working with our government user community Preservica has developed a flexible range of secure transfer and "in-place" preservation options to accommodate different processes, sources of electronic records and size and frequency of transfers. The aim is to enable government archives and agencies to simplify, standardize and automate processes and eliminate laborious, error-prone and insecure data exports to ensure the highest levels of records integrity and trustworthiness. Flexible transfer options are outlined below, with each covered in more detail later.

Secure Records Transfer

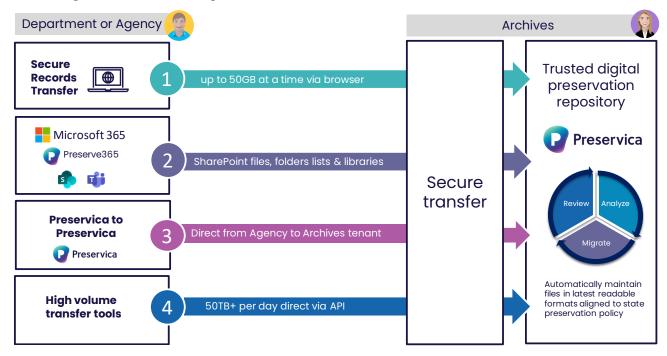
Standardize and simplify regular transfers from agencies and departments with up to 50GB at a time via a secure browser

- Secure Transfers from within Microsoft 365

 Review and securely transfer files, folders, lists and libraries from SharePoint direct to the Archives
- Secure Preservica to Preservica Transfers
 Securely copy records between a local Preservica tenant of an agency direct to the Preservica tenant of the Archives
- Secure High-volume Transfers

 Transfer large volumes of records 50TB+ per day. Ideal for large backlogs or end of term for elected officials

Summary of Transfer Options



Digital Preservation, metadata & security considerations

Before we explore the transfer options in more detail there are three other important considerations:

- 1. Ensuring long-term records are transformed and maintained in recommended or required formats
- 2. Ensuring metadata requirements for long-term records are met for findability and context
- 3. Ensuring the highest levels of data security and integrity during transfer and at rest

Let's look at each of these in turn.

Maintaining long-term records in recommended or required formats

In order to ensure long-term access to electronic records they need to be maintained in trusted readable file formats. In many jurisdictions these recommended or required long-term formats are stipulated by state (or national) preservation policies.

This can apply to long-term (> 7 year) and permanent records that:

- · Are retained at the agency or department prior to legal transfer to the Archives
- Remain in the custody of the agency or department and are not required to be transferred
- Are transferred to the custody of the Archives

For example, Colorado requires state and local entities to retain and transfer permanent government records as set out in series of statutes. For digital records the State Archives has published <u>guidelines</u> for recommended long-term formats for any government created record with a retention of 5 years or more. These recommendations are derived from recommendations set by the Library of Congress (LOC), National Archives and Records Administration (NARA), and International Organization for Standardization (ISO) to ensure long-term access to records.

Preservica's **Active Digital Preservation** uniquely enables state and local government entities to automatically align long-term and permanent digital records to formats recommended or required by state policy.

The software automatically transforms files on ingest and then continuously monitors and migrates files to ensure they are always available in the latest readable formats in alignment with the selected or configured digital preservation policy. This not only ensures long-term access to always actionable and trustworthy records but also automatic alignment to formats recommended or required by state policy.



Learn more:

- Active Digital Preservation 3 minute overview video
- <u>Digital Preservation White Paper Series</u>

Meeting metadata requirements for long-term records

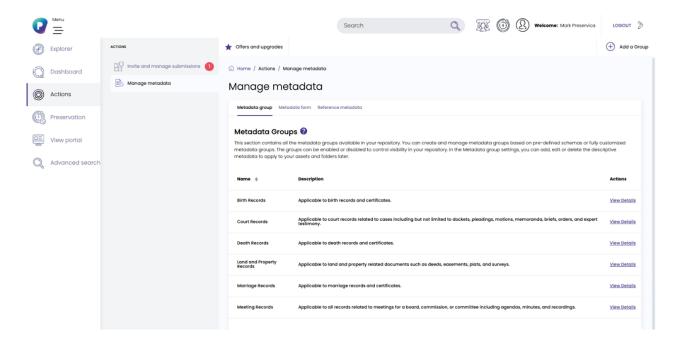
Another important requirement for ensuring long-term access to electronic records is the addition of metadata for findability, auditability and context. This includes technical metadata that describes the file itself which is essential for correctly identifying file formats and comparing originals with migrated representations.

Many States have created custom metadata schemas for this purpose and under M-23-07, NARA not only stipulates the file formats it will receive but also mandates the form and type of metadata that must be included for both digitized and born digital records.

Flexibly managing metadata at scale is a powerful core capability of Preservica's new generation Active Digital Preservation software.

This includes:

- · Bulk transfer of metadata and records together at scale
- Out-of-the-box support for standard metadata schemas such as Dublin Core and MODS
- · Easy to use metadata designer to enable configuration of state-defined custom metadata
- Pre-configured metadata settings for a wide range of typical government record types such as Boards & Commissions, Land & Property, Vitals, Court, Engineering and Historical
- At scale application of metadata changes across multiple assets in the archive
- Controlled drop-down lists and reference tables to ensure easy and consistent addition of metadata by archival and non-archival staff
- · Al generation and enrichment of metadata using Preservica's secure open APIs
- The transfer of all SharePoint metadata along with the file for full record preservation and auditability
- Automatic extraction of technical metadata for an asset during transfer and ingest process



Learn more:

Self-guided tour of advanced metadata capabilities in Preservica

Ensuring the highest levels of records integrity and security

To ensure the integrity, trustworthiness and security of records during transfer it is essential to have direct and secure ways to move records between systems as well as ways to demonstrate that transferred records are authentic and have not been tampered with (accidentally or intentionally).

Transfer methods that involve shipping hard-drives or physical media are potentially open to data breaches or tampering. Similarly, manually exporting files out of SharePoint to upload into a digital preservation system creates additional unmanaged copies, breaks Microsoft 365 permissions and risks data breaches, tampering or errors.

The Archives also need to be able to demonstrate that permanent archival records transferred into their custody will be properly preserved and remain fully secure, readable and accessible in a controlled way over decades or in perpetuity.

Long-term secure by design

The long-term security and accessibility of our customers' records and data is of the highest priority to Preservica. All our security reports and certifications including SOC 2 Type II and ISO 27001:2013 are openly shared on the <u>Preservica Trust Center</u> and our proactive security program is overseen by a dedicated Head of Information Security.

This "secure by design" approach extends to the transfer methods outlined in this paper as well as the development and operation of our Active Digital Preservation software.

Specific data security and integrity measures Preservica uses for the transfer and storage of electronic records:

Secure transfer processes

- All data is encrypted in transit (and at rest) for additional data loss prevention
- Use of unique and secure https://links
- All Preservica public APIs provide secure endpoints using TLS 1.2

Microsoft 365 security assurance

- For transfers from SharePoint direct to the archive all Microsoft permissions (ACL) are preserved and enforced
- For transfers from SharePoint direct to the archive the full context of the record (file, metadata and structure) is preserved and retained to ensure full auditability, authenticity and integrity
- Preserve365® is an enterprise app with an implicit trust model developed in collaboration with Microsoft

Advanced security by design

- Every file entering the trusted digital preservation repository is checked for viruses
- Every file entering the digital preservation repository is check-summed for long-term integrity

- Multiple copies of files across multiple cloud locations are created and maintained for self-healing data durability
- All data is encrypted at rest for additional data loss prevention
- Files (including complex digital assets made up of multiple files or component parts) are maintained as a single unbreakable entity (even if individual component files are migrated to newer formats to maintain readability)
- Access to the digital preservation repository can be carefully controlled by customers: secure access controls include 2FA, Single Sign-on (SSO) and extensive Roles & Permissions down to an individual record level

Learn more:

- Preservica Trust Center
- <u>Preservica Enterprise Edition</u>

Transfer options in more detail



Secure Records Transfer

Secure Records Transfer is ideal for standardizing and managing regular transfers from 100s of different agencies or departments, for example weekly or monthly transfers of permanent records such as meeting minutes of boards & commissions. With up to 50GB supported for each transfer it can also be used for archival record backlogs or project closures or the records of elected officials.

In addition, Transfer of Custody can be acknowledged and tracked, all records automatically preserved in alignment with the state preservation policy and once transferred easily published online using Preservica's built-in citizen portal (if required).

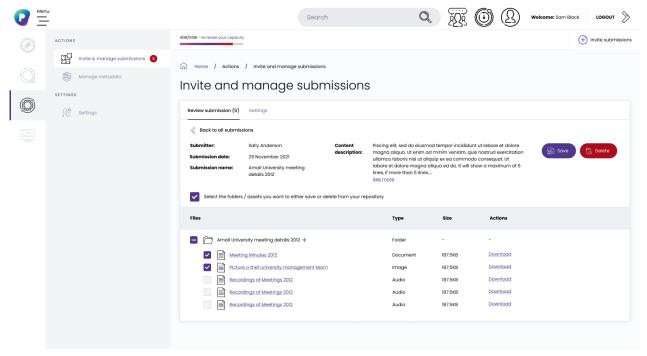
Consistent management and tracking of transfers

Using an intuitive console the Archives team can streamline and standardize transfers by emailing authorized agency and department representatives to prompt transfer. Transfer invites can be open-ended or given a custom expiry date.

In future software releases it will also be possible to schedule invites to only be open for a specific window of time to create urgency, for example to receive records in the last 2 weeks of the quarter or year. It will also be possible to schedule automated email reminders to prompt submissions.

Once received from the agency the Archives team can review and manage transfers in the secure online holding area, including rendering or previewing records, before selectively archiving records in the digital preservation repository.

Transferred records that have been appraised and processed by the Archives team can be quickly published online (if required) in just a few clicks using Preservica's built-in citizen portal.



Secure Records Transfer: Archives team console

Secure transfer of custody

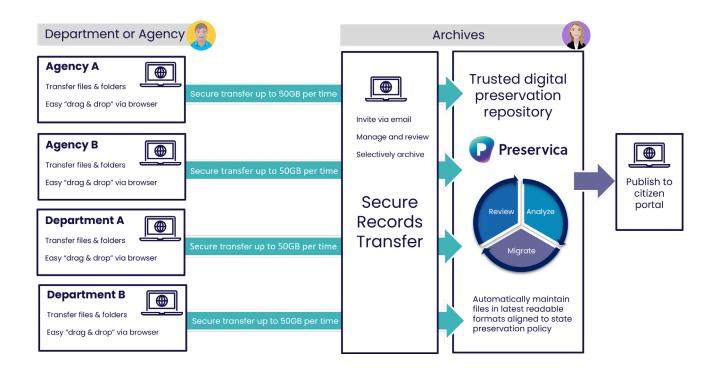
Authorized agency and department representatives are provided with a unique and secure https:// link and simply need to "drag & drop" the archival records for transfer (up to 50GB at a time) from a file share or local machine using a standard browser direct to the secure online holding area of the digital preservation repository.

During transfer, Preservica's Active Digital Preservation software automatically ensures all records are checked for viruses and checksums are created to maintain integrity. Records are also transformed and then continuously maintained in the latest readable formats in alignment with the selected or configured state digital preservation policy. In addition, all data is encrypted in transit and at rest in the digital preservation repository for additional data loss prevention.

During submission agency or department staff are prompted to accept the records transfer terms to acknowledge the transfer and assign "physical" and legal custody over to the Archives. In future software releases it will also be possible to provide confirmation back to the agency once the transfer has been successfully completed.

Secure Records Transfer

Standardize and simplify regular transfers from agencies and departments with up to 50GB at a time via a secure browser



Learn more:

Self-quided tour showing upload and transfer options



Secure Transfers from within Microsoft 365

Preservica's <u>Preserve365®</u> uniquely enables authorized agency and/or archives staff with the appropriate Microsoft permissions to securely transfer records (files, folders, lists and libraries) direct to the digital preservation repository of the Archives - all from within SharePoint.

This makes it ideal for both ad hoc e.g. project closures and for regular transfers of permanent archival records e.g. executive branch records such as the minutes of state boards and commissions, substantive correspondence of elected and appointed officials or mission-critical public policy decisions.

Secure real-time or automated transfers

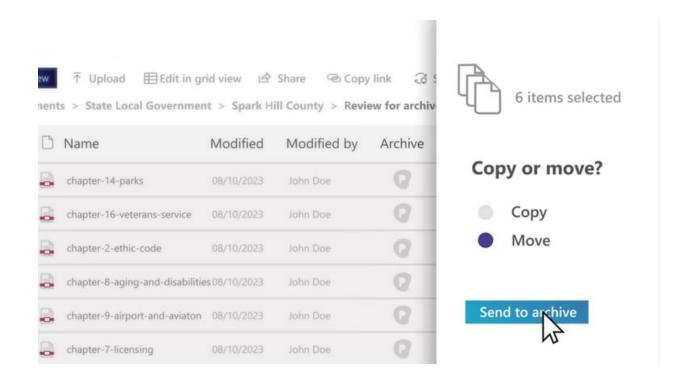
Transfers can be performed real-time from within SharePoint in just a few clicks or automated using Microsoft retention labels or Microsoft Power Automate process workflows. This enables secure, standardized and compliant transfers direct to the Archives and avoids labor-intensive manual exports out of SharePoint that risk the integrity and security of records.

For real-time transfers, the Archives team can set-up secure archival review folders in SharePoint that authorized agency representatives can move records into. Archives staff can then review items moved into the SharePoint folder holding area and selectively transfer records (files, folders, list or libraries) into the Preservica digital preservation repository by simply selecting the items and clicking on "Send to Archive" or by applying a Microsoft retention label e.g. "permanent archival" - all from within SharePoint.

SharePoint columns and fields can also be configured to record and timestamp different content review actions, owners and decisions and add contextual metadata if required. This can also be used to track and acknowledge transfer of custody to the Archives.

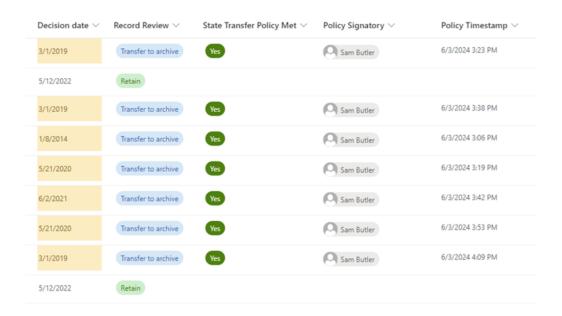
During transfer, Preservica's Active Digital Preservation software automatically ensures records are transformed and then continuously maintained in the latest readable formats in alignment with the selected or configured state digital preservation policy. All data is transferred directly using secure APIs which through TLS 1.2 ensure data confidentiality and integrity.

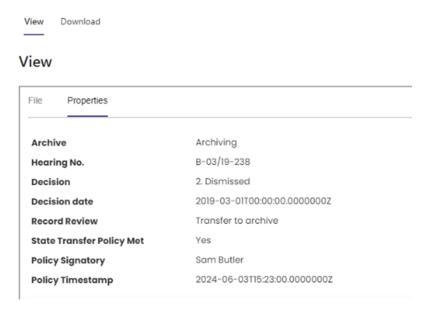
In addition, with Preservica's unique Full Record Preservation all the associated SharePoint metadata and structure is transferred and retained with the record to ensure complete integrity, auditability and authenticity. Transferring the SharePoint folder structure also allows the Archives team to create a SharePoint site which has ideal archival folder hierarchies already in place.



Tracking the transfer of custody

As mentioned, SharePoint columns and fields can be configured to record and timestamp different content review actions, owners and decisions. All column data is transferred to the digital preservation archive and is retained with the record. This provides timestamped proof that the transfer policy has been accepted and by whom and assigning "physical" and legal custody over to the Archives.





Transfers from multiple agencies

In many larger states or local government jurisdictions agency SharePoint sites are often hosted on separate tenancies both from each other and from central functions. Preserve365 has been specifically architected to support "many-to-one and one-to-many" transfers which means that multiple agencies using separate SharePoint repositories can seamlessly transfer records to the Preservica tenant of the Archives - using the real-time or automated processes outlined above.

In addition, Preserve365's "one-to-many" multi-archive architecture allows agencies to move or copy long-term (> 7 years) and permanent records that are not required to be transferred to their own local Preservica tenant. This "preservation in-place" ensures that long-term records remaining in local custody are digitally preserved, remain trustworthy and are automatically maintained in readable file formats recommended or required by the state's preservation policy. The local repository can be a separate Preservica tenant or a tenant on the Archives' Preservica instance (if Enterprise Plus edition is being used).



Fast secure records retrieval

During transfer all records are fully indexed in SharePoint enabling archived records to be quickly retrieved by agency or archives staff (with the appropriate Microsoft permissions) using SharePoint search. This ensures that archived records can always be quickly found, read and trusted for FOI requests, litigation or operational needs – all from within SharePoint.

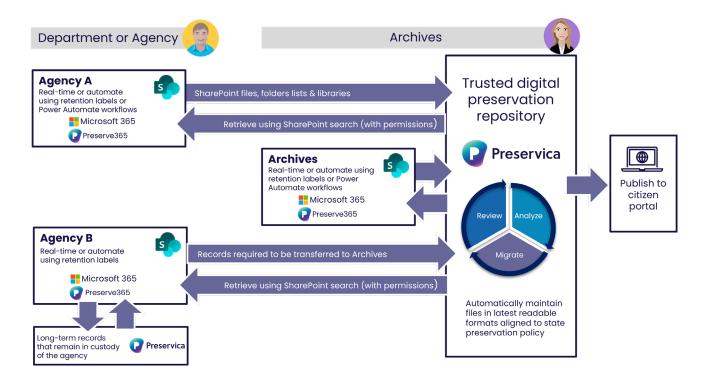
Automating transfers with Microsoft retention labels and/or Power Automate

Using Microsoft Compliance features, Archives and Records Management teams can fully automate existing file plans. Microsoft retention labels can be configured and aligned to archival actions in Preserve365 to enable the transfer of records at scale by enabling authorized agency or Archives staff to apply labels to files, folders, lists and libraries. More advanced users of Purview with G5 licenses can also utilise labels which apply automatically based on an event, allowing the Archives to have more control over a label being applied while still experiencing records transfer at scale without manual intervention

Using Microsoft Power Automate, Archives and Records Management teams can create entire retention and disposition workflows which can span a number of applications. With Preserve365 those custom workflows can ensure the large-scale transfer of records in a standardized and consistent way. The full process can be sculpted to carry out a gated workflow of archival disposition reviews, Transfer of Custody agreements and transfer and digital preservation of the record and its full context - potentially without any human intervention.

Secure Transfers from within Microsoft 365

Review and securely transfer files, folders, lists and libraries from SharePoint direct to the Archives



Learn more:

- Self-quided tour of Preserve365
- Preserve365 overview and demo videos
- Preserve365 for IT Leaders



Direct Preservica to Preservica Transfers

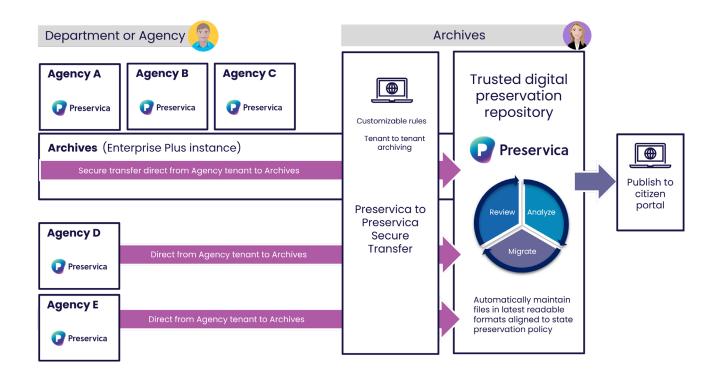
Where both the agency and the Archives have Preservica tenancies then permanent archival records can be securely and quickly copied from one custodian to the other using Preservica's cross-tenant archiving technology which uses secure APIs to create a direct connection between Preservica tenants.

Authorized archival administrators with appropriate security permissions can define customizable rules and parameters to fully automate the transfer of selected records by copying from one tenant to another in a secure and efficient way. Once the transfer has been automatically validated, custody can be assigned to the Archives and the records deleted from the original tenancy.

Agencies can either be on their own Preservica tenant or a tenant on the Archives' Preservica instance (if Enterprise Plus edition is being used). A combination of the above is also supported where some agencies may have separate Preservica tenants and others are tenants on the Archives' Preservica instance.

Secure Preservica to Preservica Transfers

Securely copy records between a local Preservica tenant of an agency direct to the Preservica tenant of the Archives





Secure High-volume Transfers

When large one-off transfers are required e.g. a significant backlog of records from agency consolidation or reformation, or closure of a major project or end of term of an elected official or a major records digitization program, then Preservica has a number of ways to enable secure and rapid transfer of high volumes of records from the agency to the Archives.

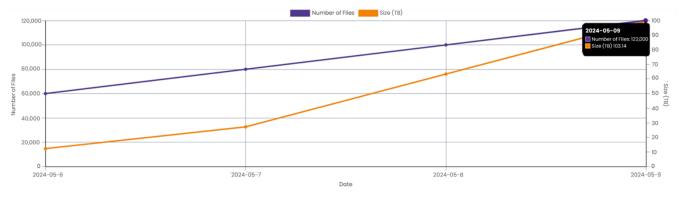
Depending on the volume of records there are options - ranging from ITB per day to 50TB per day or more - that package up content and metadata in an optimum way and use a secure and direct API connection to ensure rapid transfer and ingest of records into Preservica.

Express Ingest

For significant volumes - in the 100's of TBs to PBs - then Preservica's Express Ingest Service is an optimum solution. The package is available in increments of 50TB or 100TB (but can be scaled further) making it the perfect choice for quickly transferring very large volumes of archival records up to PB scale.

Express Ingest is a fully managed service. The Archives work with a dedicated Preservica digital preservation expert who oversees and manages the transfer from start to finish. This includes working with the Archives (and/or agency) to prepare and package records and metadata in an optimum way for maximum transfer and ingest speeds, optimizing the cloud infrastructure, resources and job queues based on file size and volume and monitoring and validating the transfer.

The project manager and Archival administrators can view reports to track progress and completion. The example below shows 100TB and 120,000 files successfully transferred in days from a local system to secure digital preservation in the cloud at the Archives.



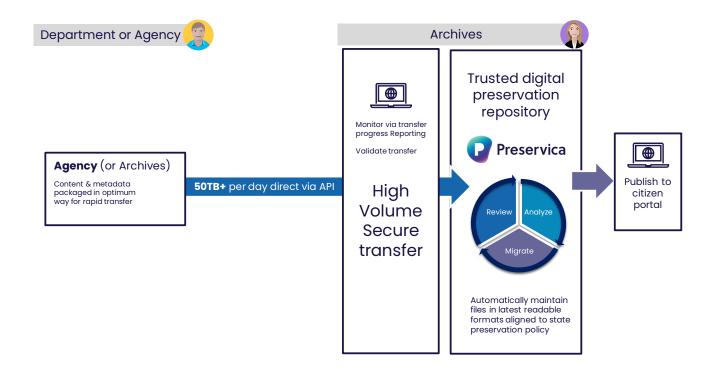
Example report in Preservica showing number of files and TBs transferred using Express Ingest service

Fully automated digital preservation

During transfer every file is checked for viruses, fully identified, check-summed for ongoing integrity, automatically transformed into the latest recommend long-term and access formats in alignment with state preservation policy and multiple copies stored in the cloud across multiple locations for maximum durability. Preservica's highly scalable architecture ensures the highest levels of processing speeds.

Secure High-volume Transfers

Transfer large volumes of records – 50TB+ per day. Ideal for large backlogs or end of term for elected officials



Summary

Since publication of the MoVE-IT report (Modelling Viable Electronic Information Transfers) (2021) the digital records challenge has increased exponentially with the adoption of Microsoft 365 and SharePoint across many States. At the same time new more automated options for digital preservation, metadata management and transfer have also become available.

The new transfer and "in-place" digital preservation options explored in this report are also summarized in the Appendix. As stated, the aim of the Paper is to provide a discussion point that enables state agencies and archives to assess different ways of meeting the records transfer challenge.

Appendix: Comparison table of transfer options

Transfer method	Record & content types	Size & Frequency	Agency or department	Archives	Preservica Edition
Secure Records Transfer	Permanent archival records e.g Boards & Commissions Meeting records Mid-sized backlogs e.g. project closure All file format types e.g document, image, and AV files etc.	Up to 50GB per transfer Regular transfers – time-limited or at own frequency e.g. daily, weekly, monthly or quarterly Ad hoc one-off	Easy "drag & drop" of files and folders from local machine or file share using a unique and secure https:// link and browser All data is encrypted in transit to ensure data confidentiality and integrity Option to accept terms of transfer and assign "physical" and legal custody over to archives	Invite authorized agency or departmental representatives to transfer Schedule email reminders to be sent on recurring frequency (e.g. weekly, monthly, quarterly) to ensure consistent and timely transfer of records Manage and review record transfers from agencies or departments in secure holding area before accepting into the archive Quickly update and apply metadata Create multiple custom metadata schemas** Automatically perform digital preservation actions on ingest Automatically maintain files in recommended formats* in alignment with state preservation policy** Publish open records to easy-to-brand online citizen portal	Starter Plus Professional* Enterprise**
Secure Transfers from within Microsoft 365 (SharePoint)	Permanent archival records e.g Project closures Records of elected officials Minutes of boards and commissions Substantive correspondence of elected officials Mission-critical public policy decisions All formats of files	Files, folders, lists and libraries All SharePoint metadata is also transferred for full context and file authenticity Ad hoc or regular transfers	Agency (or archives) staff with correct permissions can securely transfer to the Archives in just a few clicks in SharePoint or automate transfers using Microsoft retention labels or Power Automate workflows Long-term & permanent records that remain in custody of the agency can be archived and digitally preserved on agency Preservica tenant Agency staff with correct permissions can quickly find archived records by searching or browsing SharePoint and always instantly view and action without needing original application All data is encrypted in transit (and at rest) for additional data loss prevention	Standardize transfer processes and eliminate error prone and unsecure export and upload Archives team can set-up secure archival review folders in SharePoint that authorized agency representatives can move records into. Items moved into the SharePoint folder holding area can be reviewed, processed and selectively transferred by clicking on "Send to Archive" or by applying a Microsoft retention label e.g. "permanent archival" SharePoint columns can be used to create a time stamped record in the digital preservation repository that documents the acceptance of transfer of custody of the records Archives staff with correct permissions can quickly find	Professional Plus Enterprise** with Preserve365*

				archived records by searching or browsing SharePoint Transform metadata to Archives metadata schema during transfer** Automatically perform digital preservation actions on ingest Automatically maintain files in recommended formats* in alignment with state preservation policy** Publish open records to easy-to-brand online citizen portal	
Direct Preservica to Preservica Transfers	Permanent archival records e.g Project closures Records of elected officials Minutes of boards and commissions Substantive correspondence of elected officials Mission-critical public policy decisions All formats of files	Ad hoc or regular transfer of records direct from the Agency tenant to Archives tenant Small to mid-size volumes of records Files and folders	Use when both agency and Archives have Preservica tenants Agencies tenant can be separate or part of Archives tenant**	Archival administrators with appropriate security permissions can define customizable rules and parameters to fully automate the transfer of selected records Standardized, secure and consistent process direct from one tenant to another Once the transfer has been automatically validated, custody can be assigned to the Archives and the records deleted from the original tenancy	Professional Enterprise Enterprise Plus**
Secure High- volume Transfers	A significant backlog of records e.g. Agency consolidation or reformation Closure of a major project End of term of an elected official Large digitization program	TB to PB scale transfers 50TB+ per day One-off, large backlogs	Content and metadata packaged in optimum way for rapid transfer	Fully managed service with dedicated digital preservation expert to manage the packaging of records, optimize cloud resources, monitor and validate the transfer. Archival administrators can view reports to monitor progress During transfer every file is checked for viruses, fully identified and check-summed for ongoing integrity. Records automatically transformed into the latest recommended long-term and access formats in alignment with state preservation policy.	Enterprise Plus

About Preservica

Preservica is changing the way thousands of organizations around the world protect and re-use long-term digital information. Preservica's unique patent pending Active Digital Preservation™ archiving software automatically keeps every file alive in future-friendly formats over decades to ensure that critical, high-value information can always be quickly found and actioned for FOI, compliance, legal, brand, knowledge reuse and cultural needs.

The UK National Archives, Texas State Library and Archives, MoMA, Yale and HSBC are some of the leading corporations, archives, libraries, museums and government organizations around the world that trust their data protection and future-proofing to Preservica.

preservica.com/about