Digital Bedrock : Combining Digital Asset and Preservation Management Workflows

Linda Tadic, Founder/CEO
Digital Bedrock
ltadic@digitalbedrock.com

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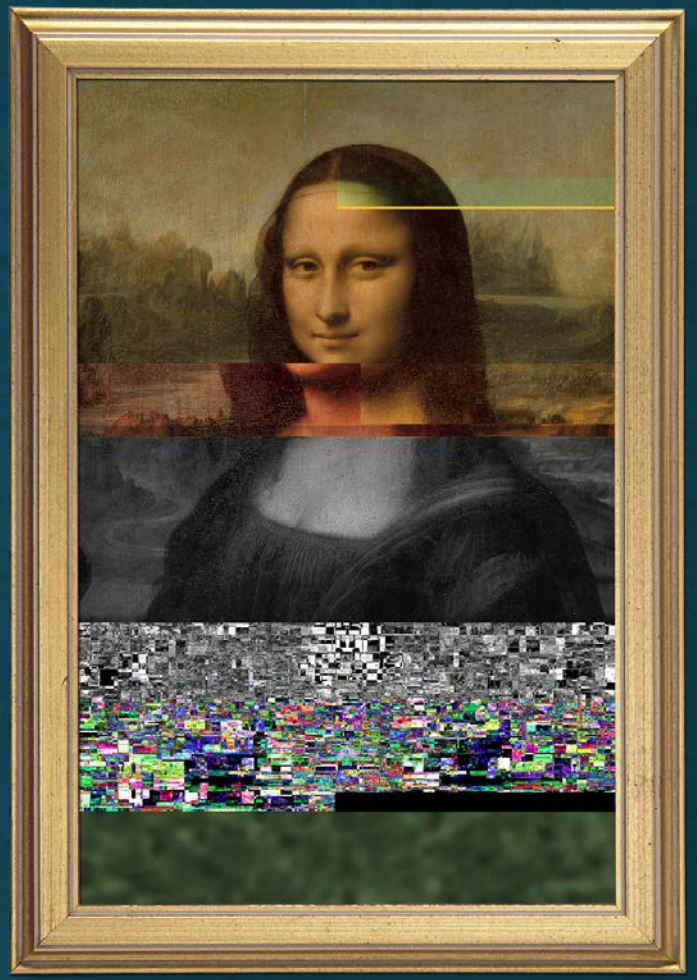
Keeping digital content usable is a complex and on-going process:

STORAGE IS NOT SECURE.
Preservation is more than just storage – hard drives crash, files are destroyed, lost, or hacked.

DIGITAL BITS DEGRADE AND BECOME UNUSABLE OVER TIME.

FORMATS AND SOFTWARE ARE VULNERABLE TO OBSOLESCENCE.
Software and file relationship dependencies are proprietary, putting future access to digital content at risk.



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“Store and ignore” is not an option.

Digital object preservation requires managing and preserving:

- The digital entity (files/essence)
- Extensive metadata about the data
- Actions/events taken to preserve the object

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Digital Bedrock

- Managed digital preservation service, built specifically for preservation actions.
- Born from decades in the community, observing a perceived need – organizations didn't have budgets or staff to build or buy infrastructure to perform digital preservation in-house.
- No license subscription, no hardware – we do the work.
- Any format and content type – not just media.
- No required metadata. Flexible database to support all types of data and metadata

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What we do

- Extensive technical and embedded metadata extraction (becomes indexed)
- Retain original directory structure for context; track file relationships
- Monitor obsolescence vulnerabilities (Digital Object Obsolescence Database; aka the “DOOD”)
- Events audit trail
- Scheduled SHA-512 fixity checks
- Security: three copies on LTO7 (LTFS) geographically dispersed in highly secure storage. Operations in an ISO 27001 compliant data center
- Media migration (LTO7 to LTO9)
- Open architecture (no vendor lock-in)

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Our approach to actively preserving containers
(ZIP, TAR, BagIt, AXF, DCP, DPX, digital cinema camera originals, etc)

Parse out contained files while retaining metadata on the original structure. This enables us to perform the following actions on individual streams held within a container:

- Validate formats
- Extract technical and embedded metadata. This previously unstructured metadata becomes structured (indexed and searchable) in our database
- Create SHA-512 checksums for every file, DPX frame, and stream and perform scheduled fixity checks on them
- Run continuous obsolescence checks on all streams (files)
- Add active metadata

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Metadata can be:

1. **Static**

   information that won't change:

   creation (WhoWhatWhereWhenWhy), technical characteristics,

   hash (eg, checksum)

2. **Active**

   information that can change:

   obsolescence vulnerabilities, preservation and access events, storage locations, descriptive and rights metadata

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Our software

- Package creator tool (client selects files; tool de-dupes & packages files with file-level SHA-512 checksums, retaining original context)
- Digital Preservation Application (DPA)
- Client portal
- Digital Object Obsolescence Database (DOOD)

Patent filed July 2017 for DIGITAL OBSOLESCENCE AVOIDANCE SYSTEMS AND METHODS, the key algorithm behind the DOOD. The DOOD tracks and monitors format vulnerabilities through research and proprietary algorithms.

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DIGITAL BEDROCK

WORKING WITH DIGITAL BEDROCK IS EASY: GETTING STARTED

Step 1.
Select and package your files using our self-curation tool.
We do the rest!

Step 2.
Digital Bedrock analyzes your data, identifies long-term vulnerabilities, and performs health and obsolescence checks.

Step 3.
Offline replication in three locations, secure storage, and monitoring to keep your digital content viable and accessible over the long term.

File migration to new media as part of on-going preservation services

Data integrity through proactive fixity checks and protection against software and format obsolescence

Transparent audit records and processes - you'll always know where your assets are

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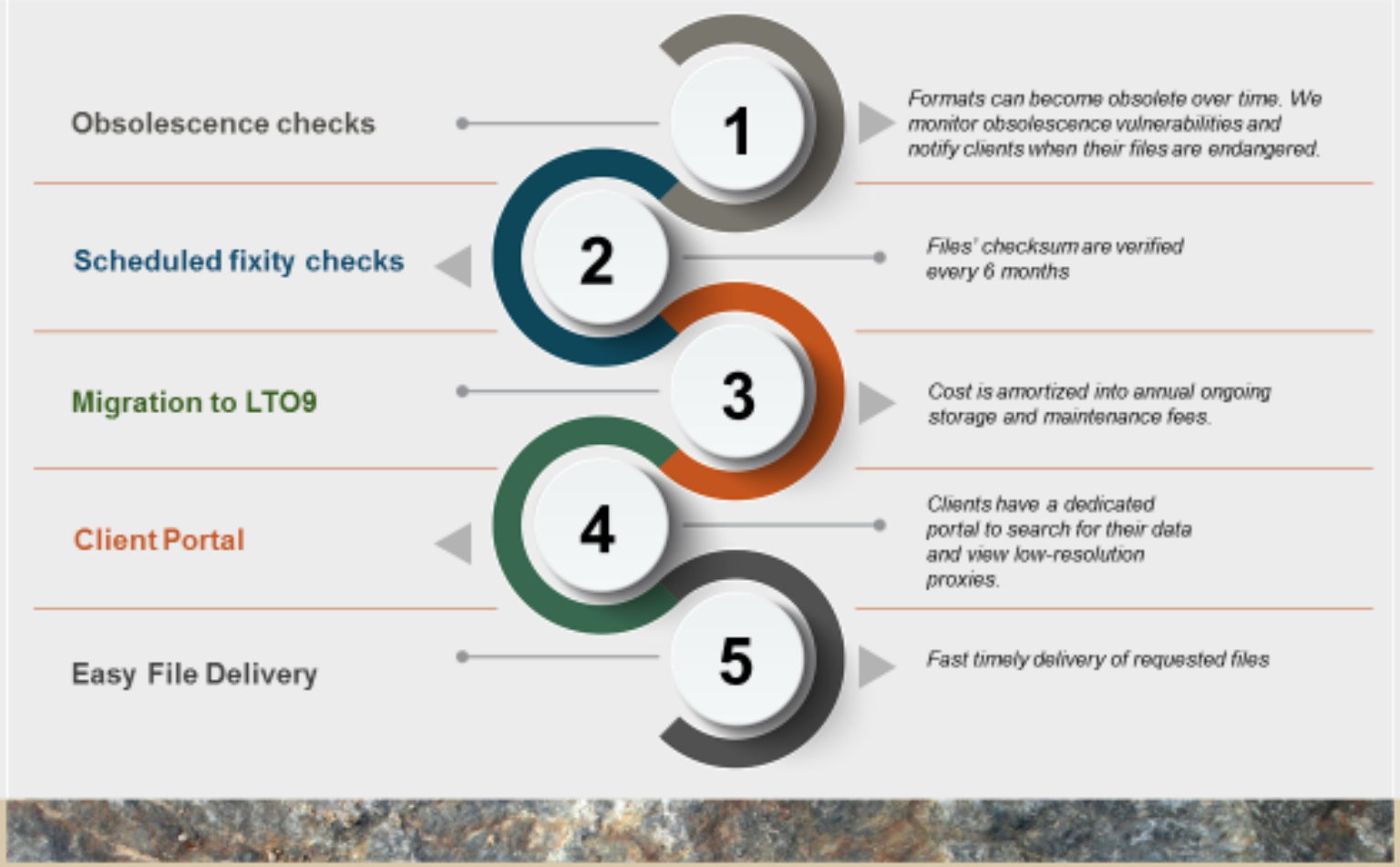
ON-GOING TRUSTED DIGITAL PRESERVATION SERVICES



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Application layer

Component	What
database	MariaDB
OS	Linux (CentOS7)
web server	Nginx
application server	Wildfly
DPA AP & DPA UI	Java EE 7
SHA-512 checksum creation	Java EE 7
index	Lucene

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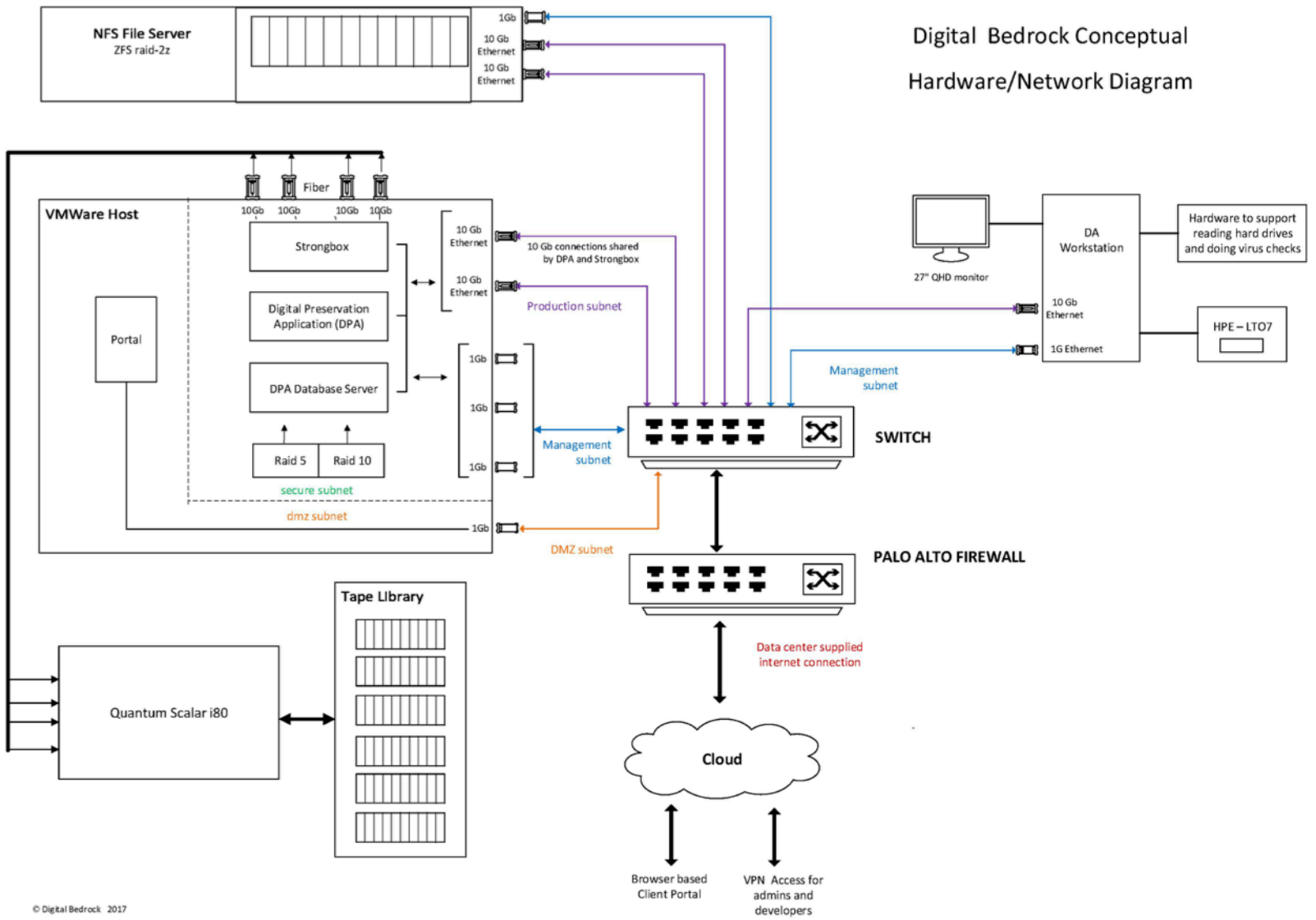

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Who we help

Clients are diversified:

Media and entertainment, creators (artists, filmmakers, composers, photographers), libraries, archives, museums, government agencies, legal, law enforcement, business, personal collections.

Partnerships:

- Consortium agreement with LYRASIS (1000+ members)
- Advising SWGDE on guidelines to preserve digital evidence (Scientific Working Group on Digital Evidence)
- Axle Video (video file management software)

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Questions?

Linda Tadic

Founder/CEO

ltadic@digitalbedrock.com