

#3. The implications that the change from preserving physical media to preserving digital information has upon a storage architecture..

- Module 3: Data Integrity -- Digital information is a paradigm shift from media preservation to information preservation. This module discusses the concept of data integrity, which includes physical and logical security, in the digital world.

Additional Concerns: Physical Documents vs Digital Media

	Physical Documents	Digital Media
Security	Physical	Physical + Digital Access Guards
Contents	Controlled environment to preserve media	Controlled environment to preserve media + physical HW to retrieve digital data + software to render it properly
Sharing	Physical Access	Physical Access + Network Access

Other concerns: restoration, error detection, intended use, authentication; etc.

Preserving Digital Information

The Letters of Thomas Jefferson: 1743-1826 THE EARTH BELONGS TO THE LIVING

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To James Madison Paris, Sep. 6,
1789

the new law to be passed for protecting copy rights and new inventions, by securing the exclusive right for 19. instead of 14. years

[a line entirely faded]

an instance the more of our taking reason for our guide instead of English precedents, the habit of which fetters us, with all the political heresies of a nation, equally remarkable for it's encitement from some errors, as long slumbering under others. I write you no news, because when an occasion occurs I shall write a separate letter for that.

- Perfect is unaffordable – sometimes digital information will be lost
- Avoid surprises – perform end-to-end analysis

Preserving Digital Information – End to End Analysis

- Error detection and correction are localized within storage systems
- Thus, defining the architecture requires
 - An understanding of how much loss can be afforded
 - Intended use
 - An end-to-end analysis of
 - Component errors
 - Media shelf life
 - Control processes to ensure system is behaving as expected
- A pair of stories of end-to-end (eventually) analysis
 - Harris COPE Controller tape transfer
 - STK Redwood Drives