STORAGE LESSONS

from the Rutgers University Community Repository

Isaiah Beard, Digital Data Curator • Rutgers University Libraries   *Designing Storage Architectures 2017*

ABOUT RUCORE

➤ "…a repository of digital research and educational materials created and used by the University community and its strategic collaborators"

➤ Primary Source Materials from Special Collections

➤ "New Jerseyana," cultural heritage from across the state

➤ Electronic Theses, Dissertations

➤ Faculty and departmental scholarly work
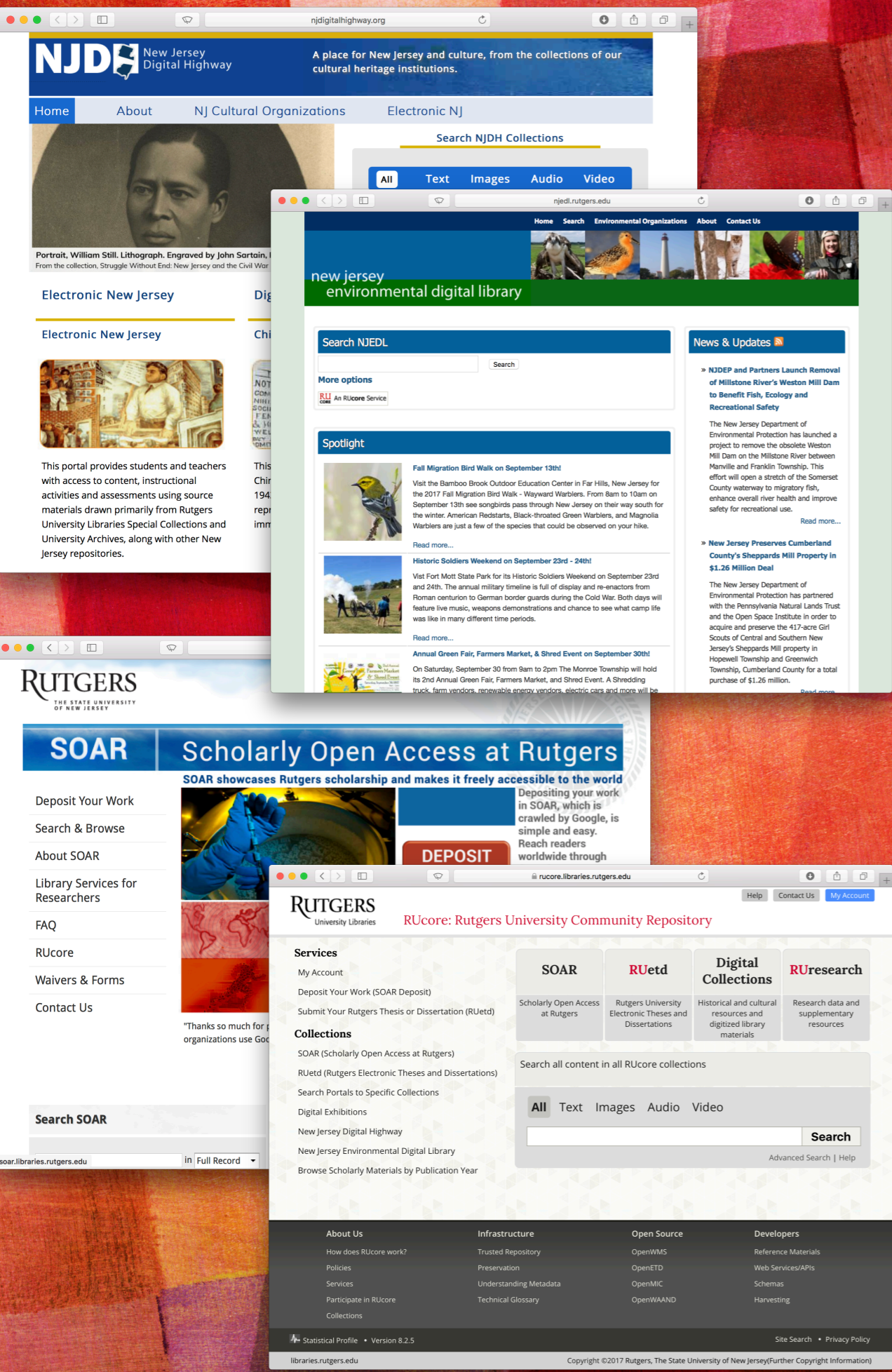
REPOSITORY STATISTICS

➤ Operation since March, 2004; comprehensive statistics gathering since November 2005

➤ Currently consumes 11.77 Terabytes of space

➤ 472,786 files in 39,113 resources

➤ Resource growth vs. storage growth tells very different tales…
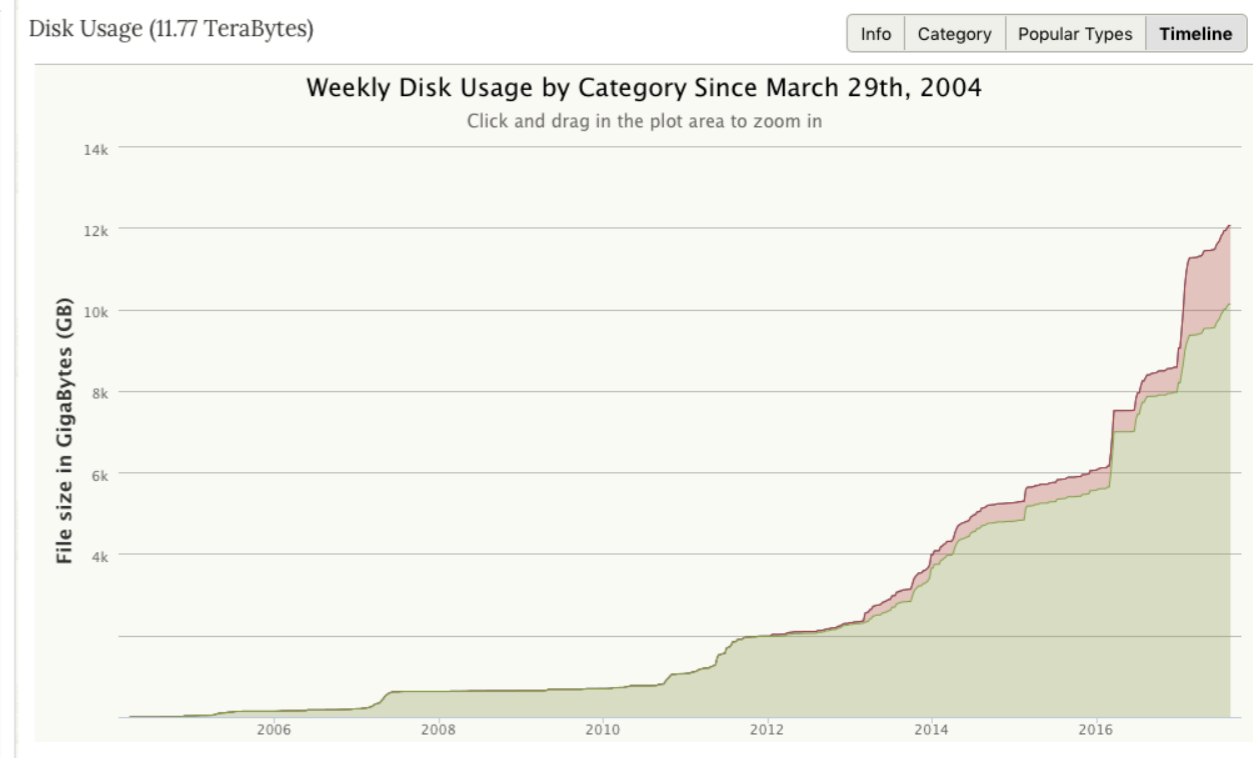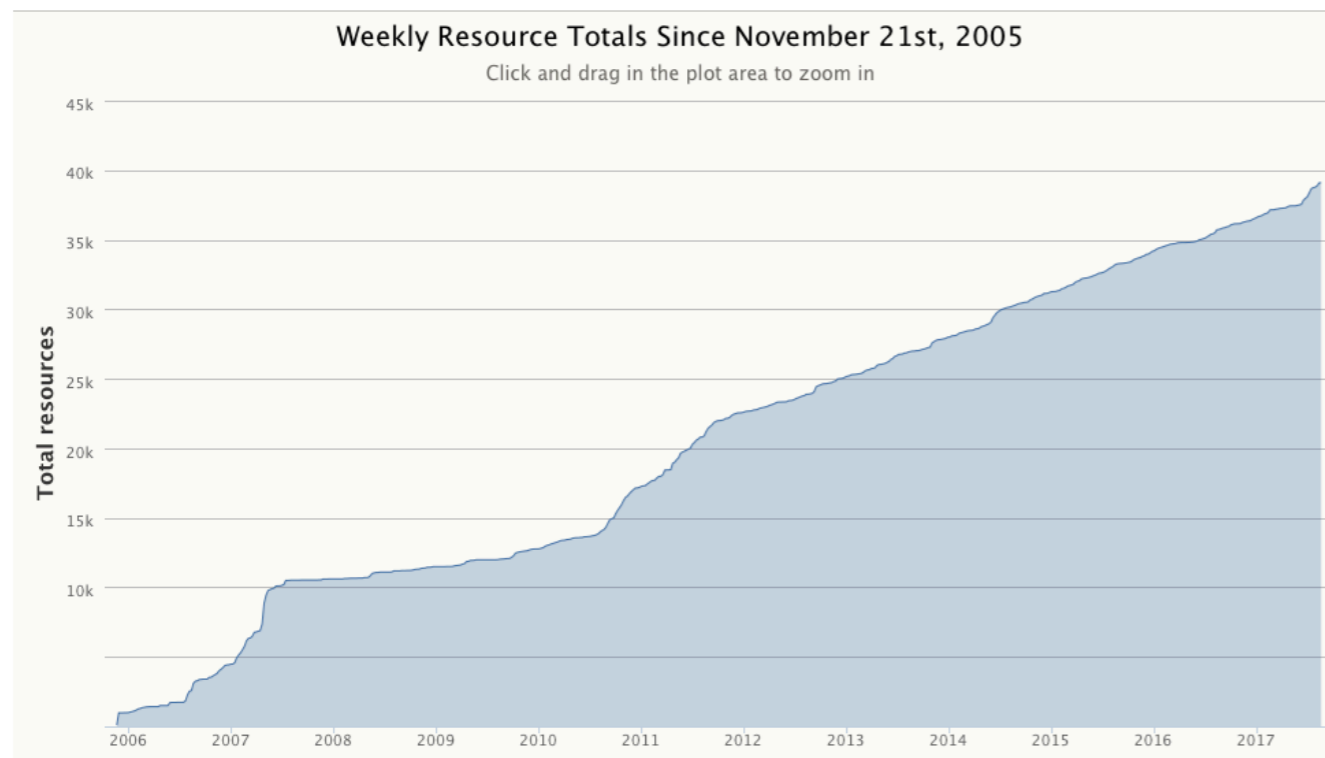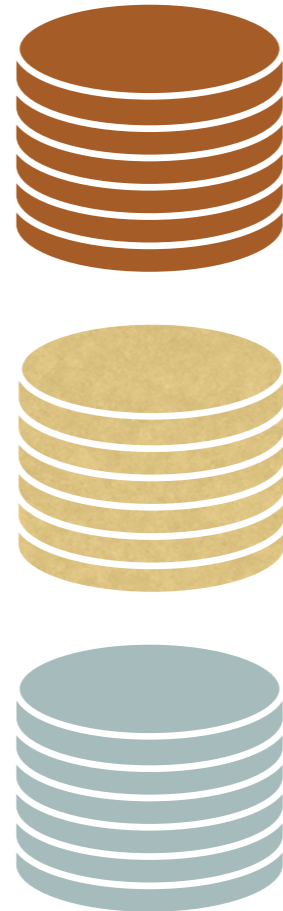
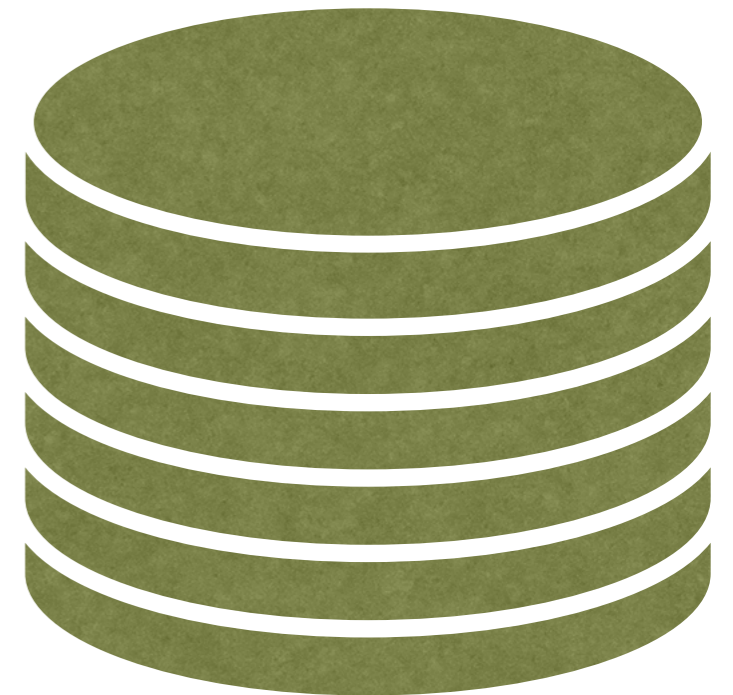# OUR STORAGE SETUP – IDENTIFYING STORAGE TYPES

Workstation Level

Staging Level
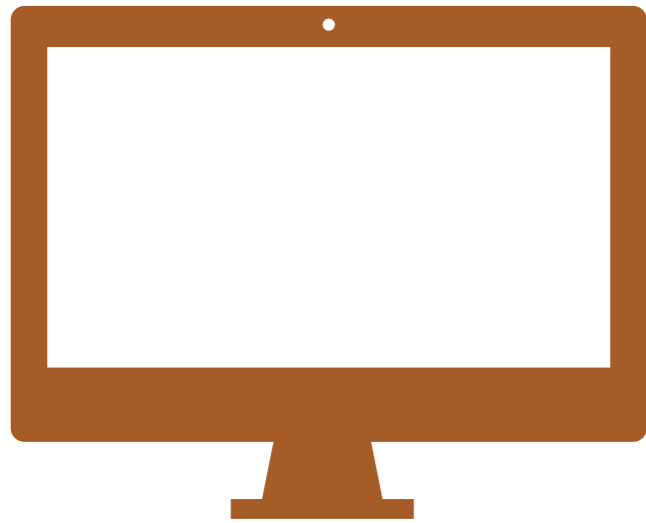
Production Level

Local SSHD

- ➤ Fast Read/write
- ➤ Content acquisition/editing
- ➤ QA/QC
- ➤ Transient/Short Duration

- ➤ Network Attached Storage
- ➤ Slow read/write
- ➤ Cataloging/preparation for ingest
- ➤ Medium duration
- ➤ Redundant/ Disk-to-Disk backup

- ➤ Server level mass storage
- ➤ Slow write/fast read
- ➤ "Final Resting Place"
- ➤ High availability/redundancy
- ➤ Tape/Off site backup

14 YEARS EXPERIENCE WITH STORAGE TECH

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➤ 3 significant storage failure events, 2 of which resulted in extended downtime

➤ Entire lots of hard drives failing *en masse*

➤ <u>Other</u> than hard-drive storage system failures

➤ Many "trials by fire" of our backup systems and recovery procedures

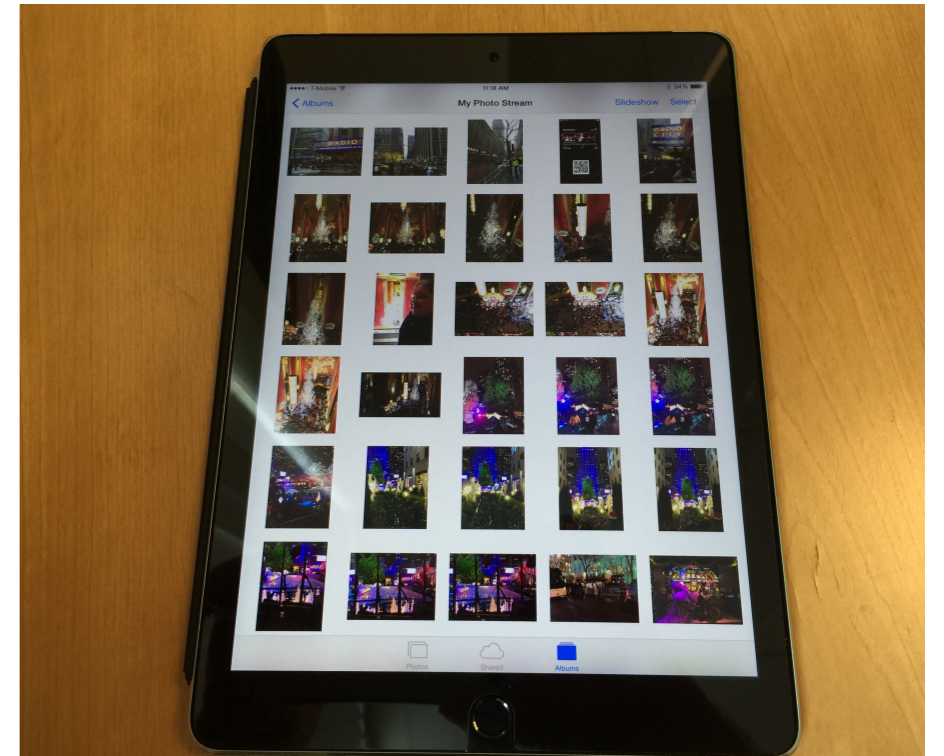# WHAT HAVE WE LEARNED, WHEN DESIGNING STORAGE ARCHITECTURES FOR RUCORE?

➤ A holistic approach is necessary, considering the storage needs of all phases of a digital project: acquisition, QA, staging, ingest, production.

➤ A "middle of the road" approach to adopting technologies will help you gain the maximum ROI.

   ➤ Bleeding edge: reliability issues, product cancellations, design flaws, support problems

   ➤ Trailing edge: "The cheap option can end up being the most expensive option."

➤ For NAS and Cloud storage: sufficient bandwidth is an essential part of the storage architecture.

Thank you!

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