

Carnegie Mellon University

Preserving Software: *The Olive Archive*

Presenter

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The Problem

Born digital interactive and executable content represents an increasing fraction of the creative output of society.

- How can we capture this content in a faithful and reliable manner?
- What constitutes reliable preservation?
- Which software should we preserve?

What about hardware?

Hardware preservation is very important.

That said, it is not a sustainable approach to digital preservation at scale.

- This approach costs us something in the user experience department
- We are focused on preserving the bits, which seem to slip away at an alarming rate

Our Approach

Olive is a virtual machine and emulation based preservation ecosystem for complex and interactive digital content.

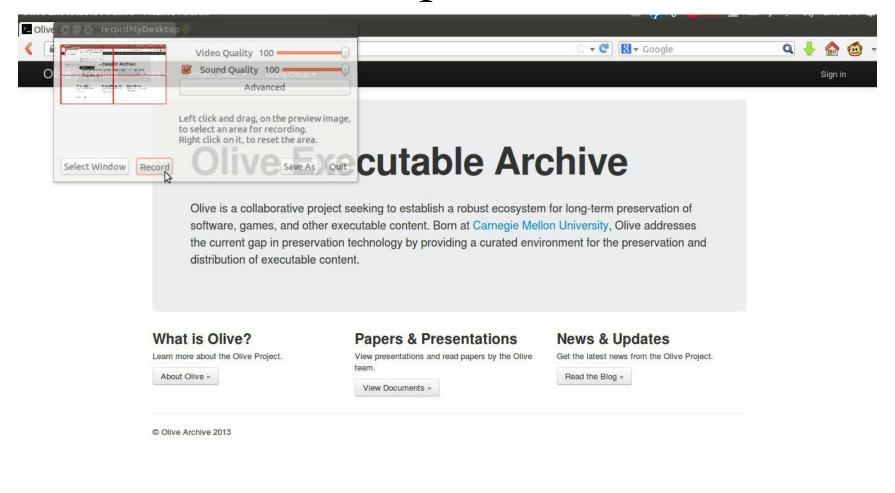
The basics:

- One piece of software = one virtual machine (space is cheap)
- Open source from the ground up to avoid a single point of failure
- Like YouTube for software

The code is available on github:

https://github.com/cmusatyalab/vmnetx

The User Experience



The Magic

How it works:

- VM Streaming (Disk is demand-paged over the network)
- Access control
- Cloud-based or local execution
- Archival copy is pristine, but individuals can still modify and interact with a working copy

Why that's good:

- Buffering of disk access (a la YouTube)
- Emulators go inside a VM, eliminating complex emulator rewrites
- Single point of maintenance (VM monitors)
- Low barrier to entry can you make a VM?

Challenges

- Intellectual Property
- Best practices
- Sustainability
- Technological
- Psychological





Thanks!

URL: https://olivearchive.org

GitHub: CMUSatyaLab/vmnetx





