

Introducing: Cooperative Library

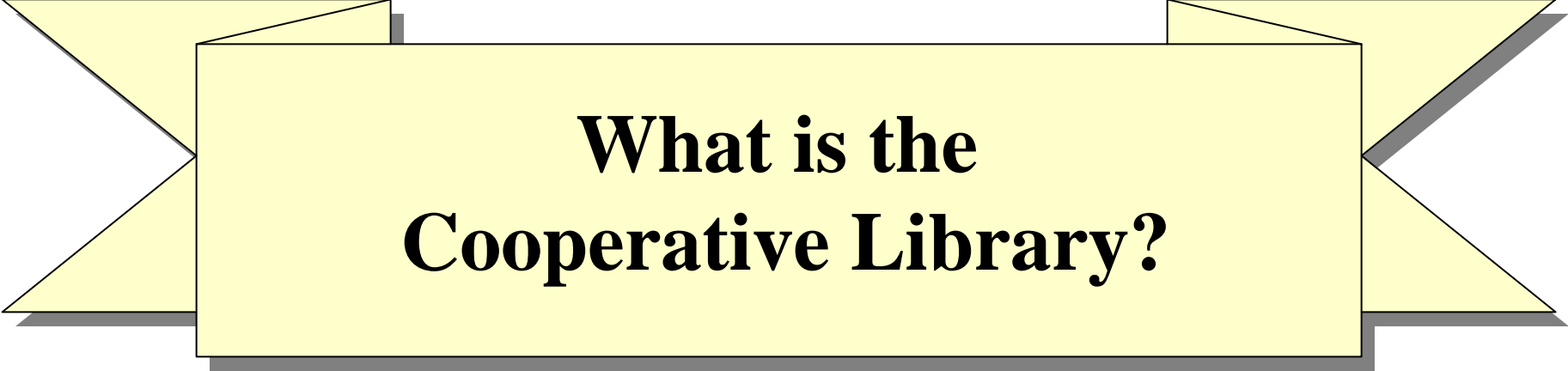
Presented August 19, 2002



Overview

Cooperative Library (CL) is a robust distributed file sharing/storage network that incorporates recent peer-to-peer research.

CL's features will attract a wide range of users and will increase demand for next generation internet.



What is the Cooperative Library?

CL is a **peer-to-peer storage system** that provides provable guarantees for the efficiency, robustness, and load balance of file storage and retrieval.

CL does all this with a completely **decentralized architecture** and **efficient algorithms** that easily scale to very large systems.

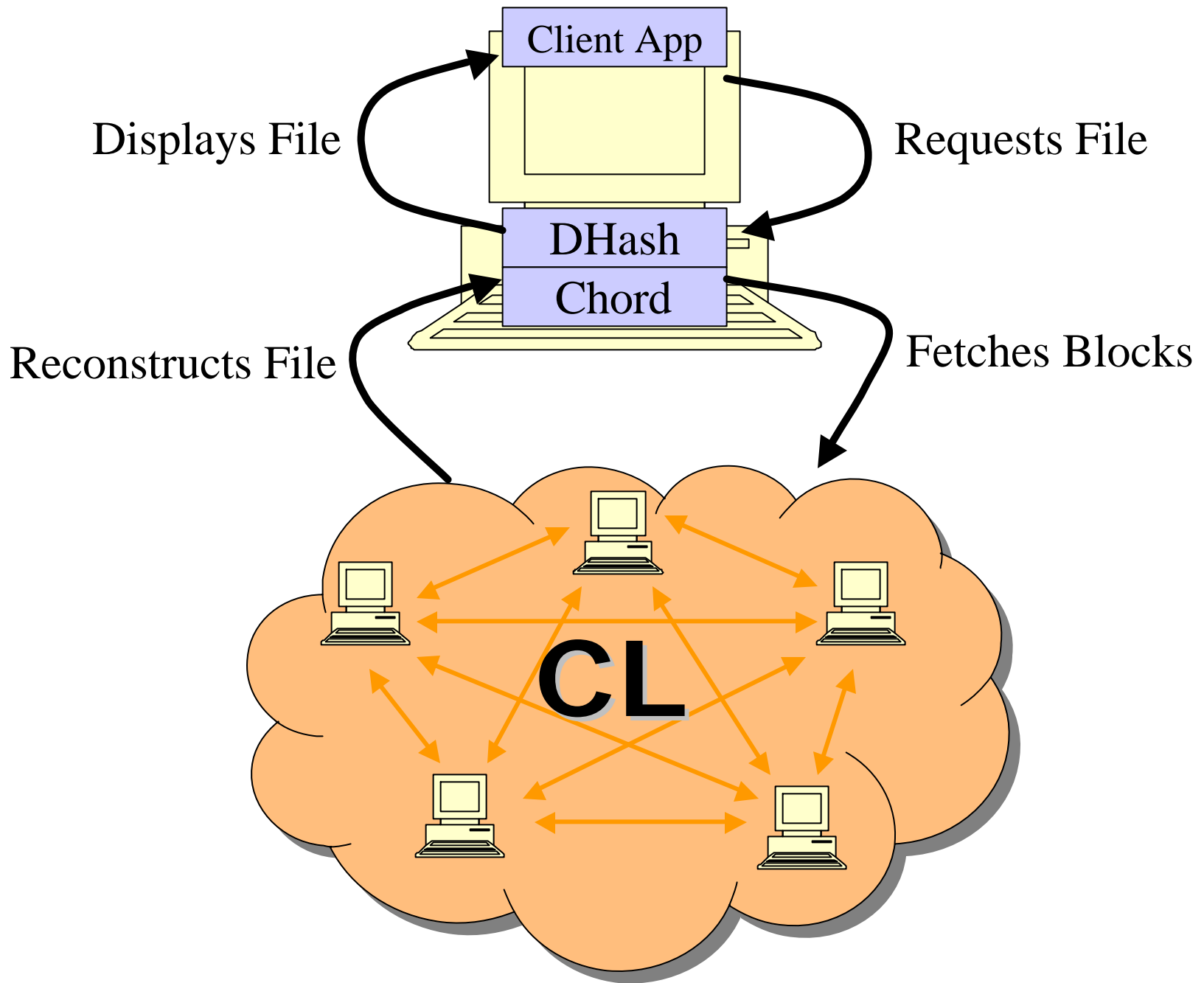
CL's core technology makes this possible...

The **Core Technology** of CL is based on peer-to-peer research developed at **UC Berkeley** and **MIT**

These technologies provide powerful layers which we will use to create our cooperative library

DHash stores unstructured data blocks reliably

CHORD maintains routing tables used to find blocks



CL can do...

Decentralized Control

Servers need not share any administrative relationship with publishers

Scalability

Look ups complete in logarithmic time

Availability

Very high availability, despite frequent server failure

Load Balance

Storing and serving data divided between servers in rough proportion to their capacity

Persistence

Once data is committed, guaranteed to stay in the system for agreed upon time

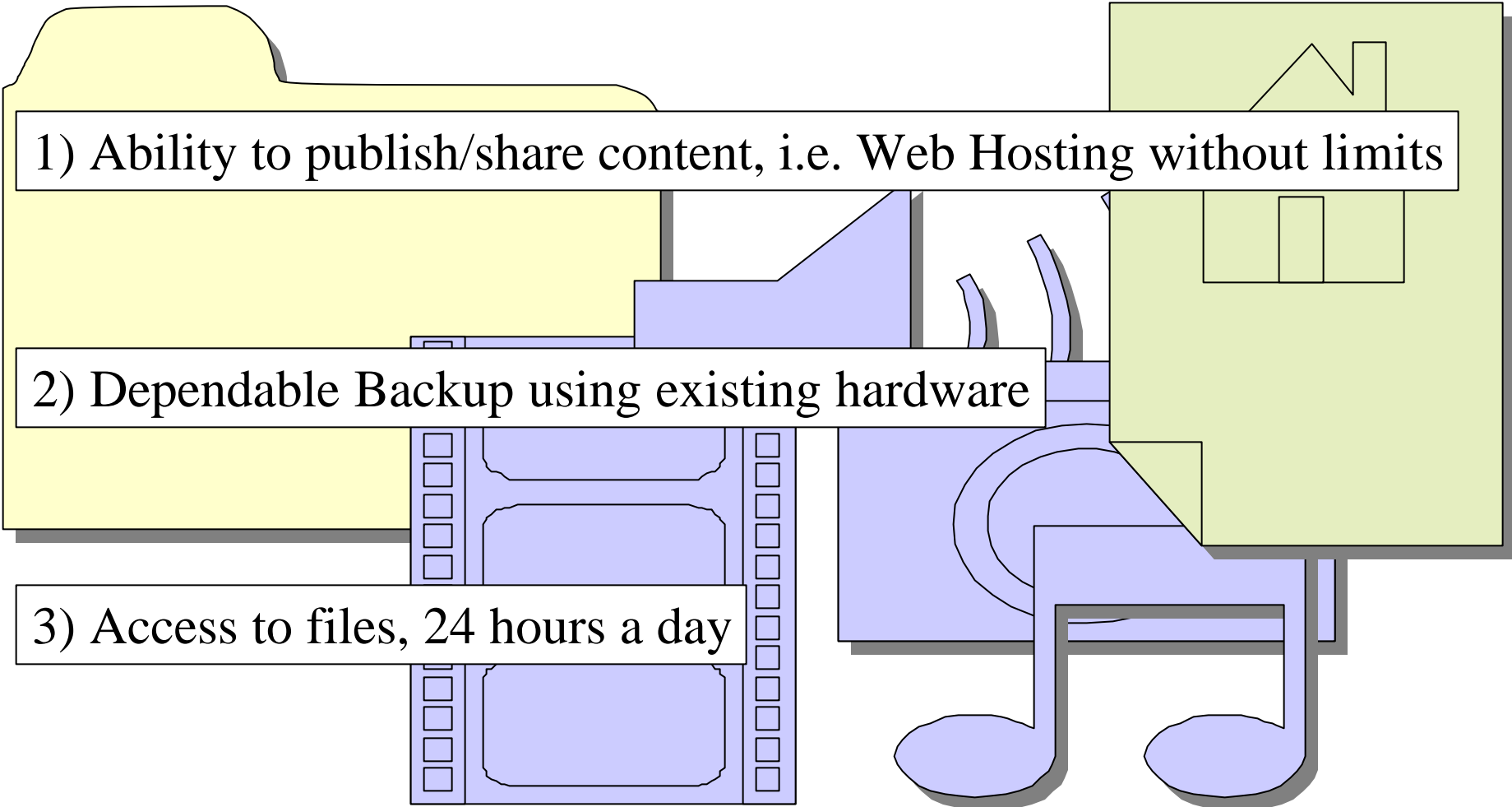
Quotas

Limits amount of data any one IP can insert into the system

Efficiency

Can fetch data with delay comparable to that of FTP

A few of the many possible uses of CL...



1) Ability to publish/share content, i.e. Web Hosting without limits

2) Dependable Backup using existing hardware

3) Access to files, 24 hours a day

How CL fits with NGI

CL file sharing application needs bandwidth to support high demand for rich content

CL increases the customer base for file sharing and storage stimulating demand for the broadband Internet access Next Generation Internet provides



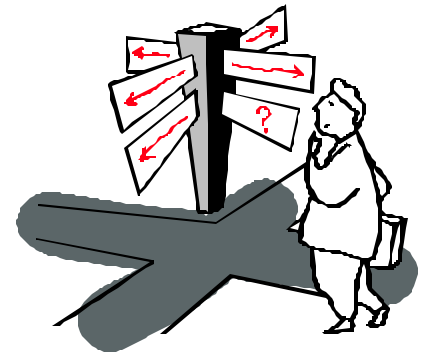
Summary

Cooperative Library is a robust distributed file sharing network that incorporates P2P research from UC Berkeley and MIT.

CL will stimulate the demand for broadband Internet access by increasing the number of people using P2P applications.

We'll develop BCL in iterations and expect to finish the system by the end of the semester.

Thank You



Future Work

- Support for concurrent writes
- Support for limit of data a user can insert into the system
- Explore other distributed systems

Acknowledgments

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- Steven Czerwinski
- The researchers of Chord and Dhash at MIT.