

# Building on IBP

Adding Programmable Storage to  
Network Infrastructure

Hunter Hagewood

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**LCI**

LOGISTICAL COMPUTING AND  
INTERNETWORKING LAB

UNIVERSITY OF TENNESSEE  
DEPARTMENT OF COMPUTER SCIENCE



# LoCI Lab

Dept. of Computer Sciences  
University of Tennessee

Dr. Micah Beck - Director

Dr. Terry Moore - Associate Director

Dr. Jim Plank - Research Fellow

# The Role of Networks

A transmission medium for byte arrays  
between diverse active devices

The scalability of the networks depends  
largely on its adherence to end-to-end  
principles



# Nature of the Communications

Not all communications are equal!

Sensitive to

- changes in available bandwidth
- jitter
- delay

Long duration

High frequency of the same transmission



# Common Solutions

## Sensitive applications - QoS

- uses storage available in the network to preserve state
- data management in this storage negates fair queuing



# Common Solutions

Tolerant applications - multiple sources

- uses storage on distributed devices
- potential out-of-dateness
- potential unsynchronization
- poor handling of large files
- limited and passive solution

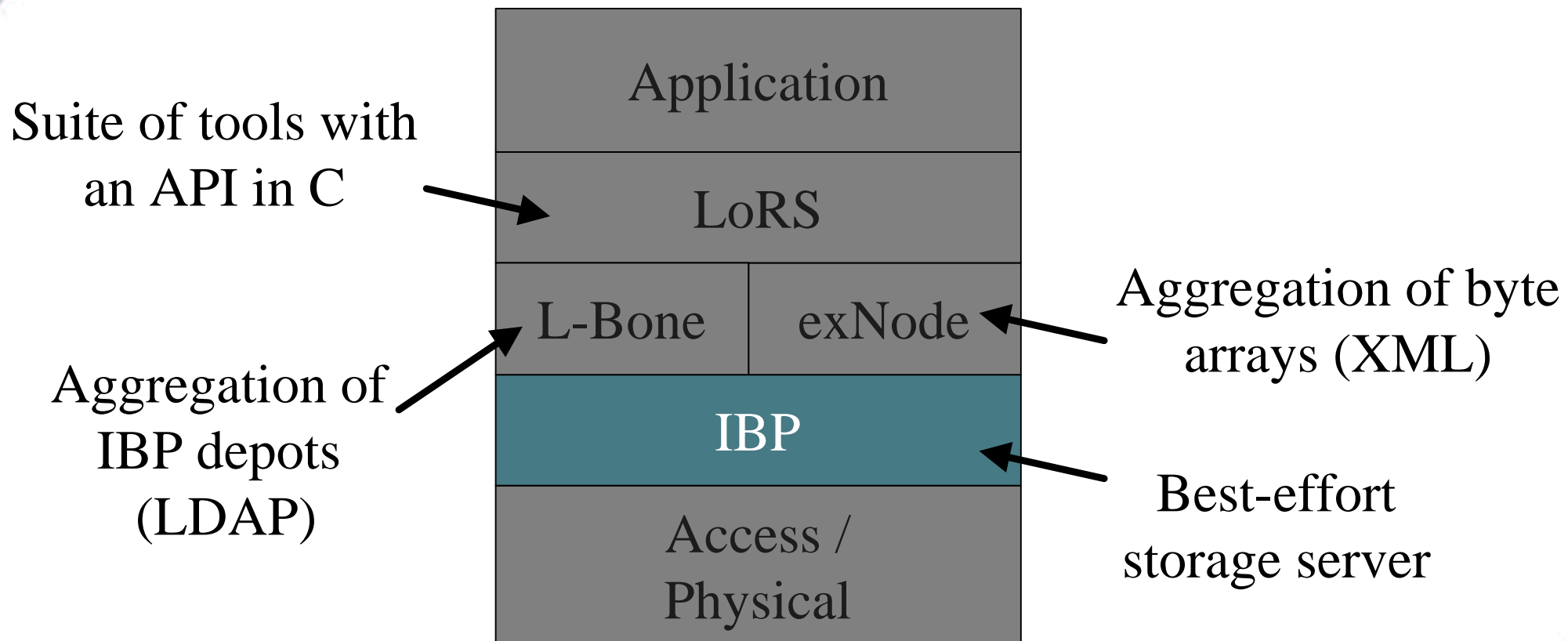


# Logistical Networking

- Exposes the fact that there are buffers along the transmission path
- Takes advantage of this and provides a layer on which to develop new communication strategies
- Uses the Internet Backbone Protocol as the foundational component for building this space



# Network Storage Stack





# Internet Backplane Protocol

- Terabyte-size buffers
- Provides network access to any local storage device (RAM, tape, CD)
- Byte arrays are controlled directly by users or applications
- Supports end-to-end services like encryption, checksums, and compression
- More passive than router buffers



# Internet Backplane Protocol

Light-weight server -

- Non-privileged
- Multi-threaded
- Less than 20 configuration parameters
- Fast installation ~ 5mins
- Time-limited storage
- Auto clean-up



# Example Applications

**IBPvo**

**LoDN**

**Mplayer**

**Transcode**

**Canal Aberto**

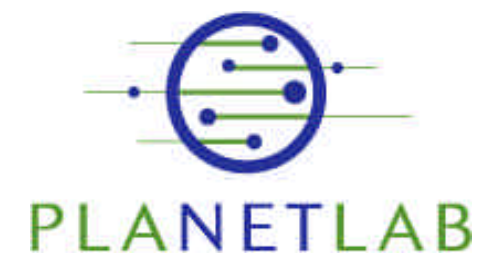
**Tamanoir**

**NetSolve**



# Groups Using LN

*Laboratoire de l'Informatique du Parallélisme  
Ecole Normale Supérieure de Lyon*



# <http://loci.cs.utk.edu>

Mail lists -

`loci-devel@cs.utk.edu`

`loci-interest@cs.utk.edu`

Personal -

`hagewood@utk.edu`

*(83) 227-0727*

