combox

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0x00B252AF

April 20, 2016

Acknowledgments

Dr. Robert C. Green II

(cons 'combox 'presentation)

Introduction

Problem

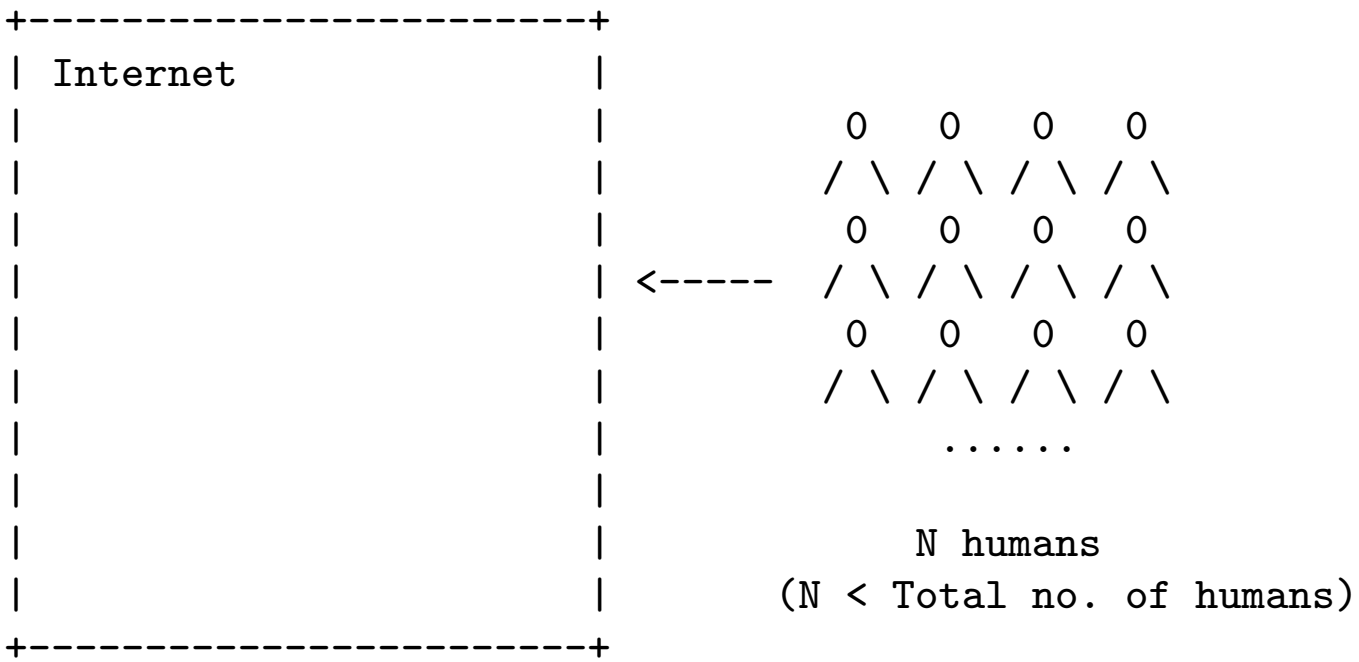
Proposed Solution

Benchmarks

Testing

Conclusion

2016



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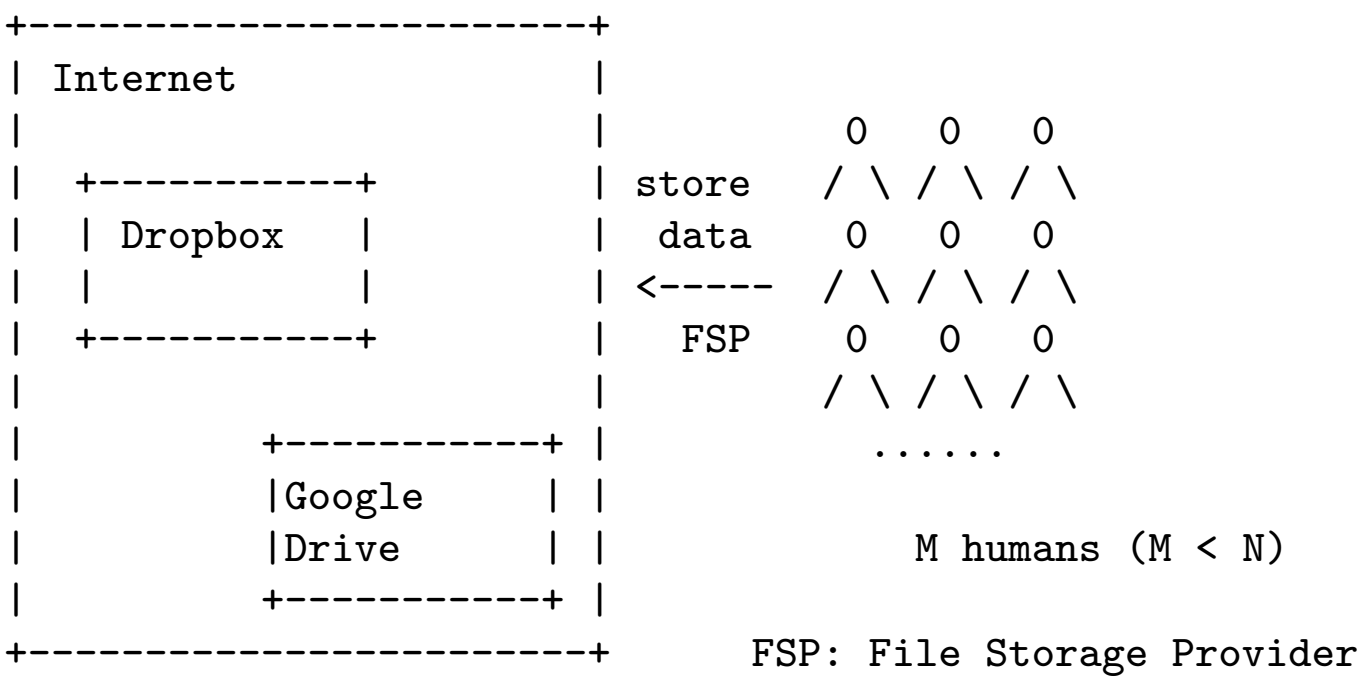
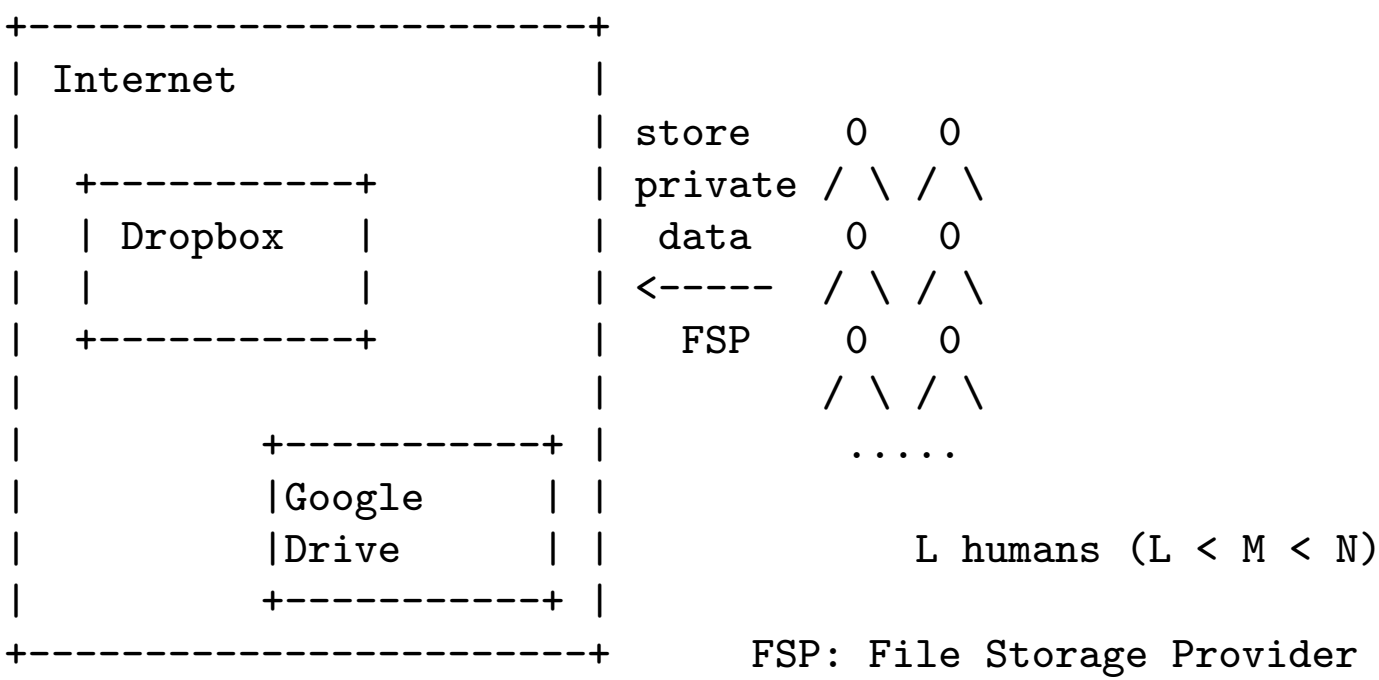

Internet
Dropbox
Google
Drive
store
data
<-----
FSP
M humans (M < N)
FSP: File Storage Provider

2016


Internet
Dropbox
Google
Drive
store
private
data
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FSP
0 0
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.....
L humans (L < M < N)
FSP: File Storage Provider

Invariantly

Law & Order. We may disclose your information to third parties if we determine that such disclosure is reasonably necessary to (a) comply with the law; (b) protect any person from death or serious bodily injury; (c) prevent fraud or abuse of Dropbox or our users; or (d) protect Dropbox's property rights[1].

[1] https://www.dropbox.com/privacy

2013

- ECHELON
- Carnivore
- XKeyscore
- Boundless Informant
- PRISM

Problem

"L" folks are in trouble.

“L” are in trouble

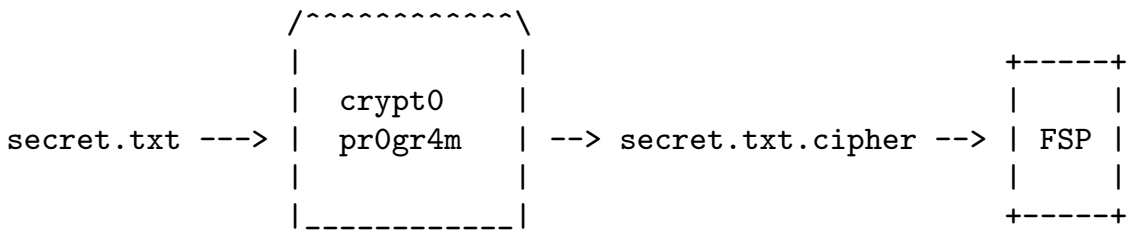
Data stored in FSP’s[2] computers $\neq$ Private

[2]FSP: File Storage Provider

The last resort

Encrypt everything!

Encrypt everthing

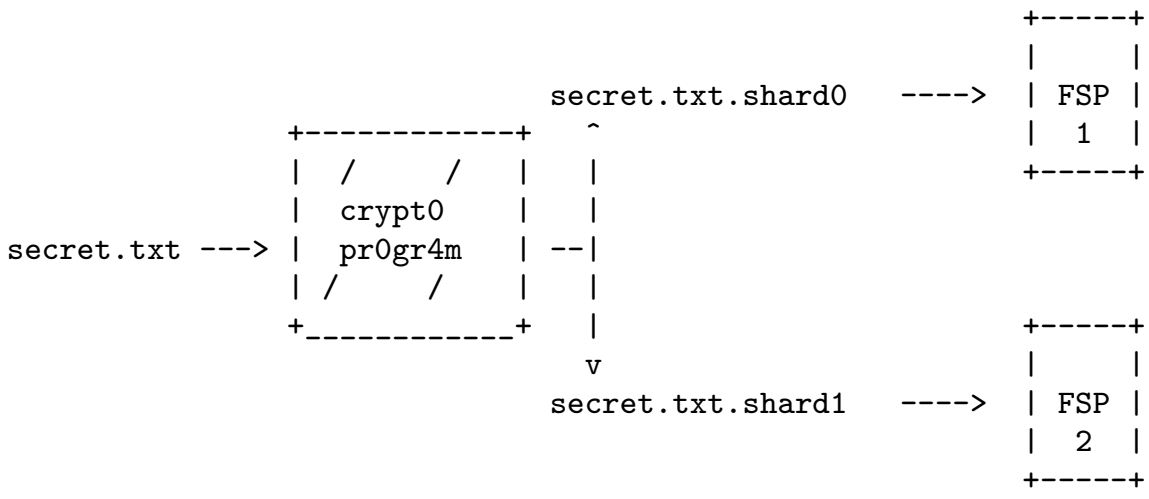


FSP: File Storage Provider (Dropbox, Google Drive, etc).

Not Enough

Our Adversaries are too powerful.

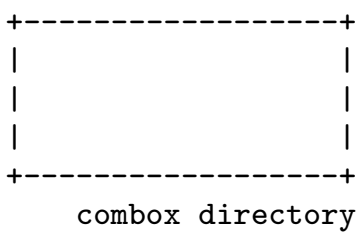
What if



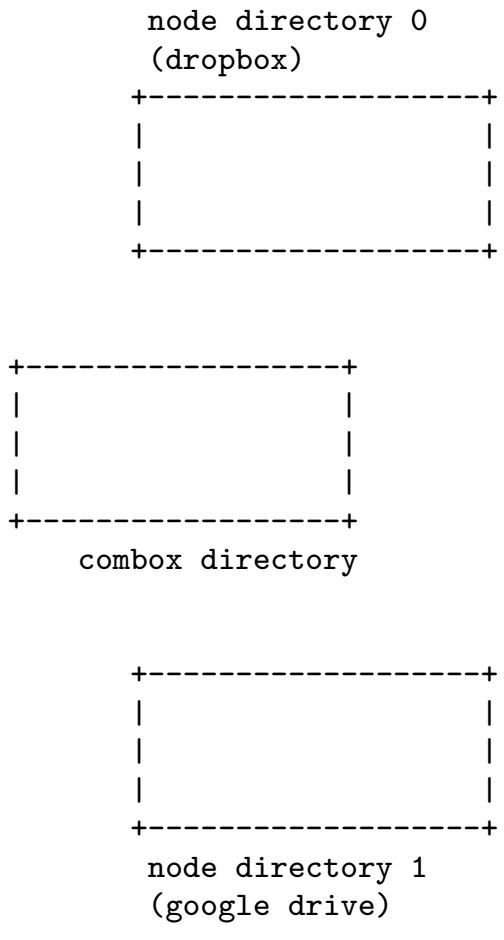
FSP: File Storage Provider (Dropbox, Google Drive, etc).

Enter combox

combox



combox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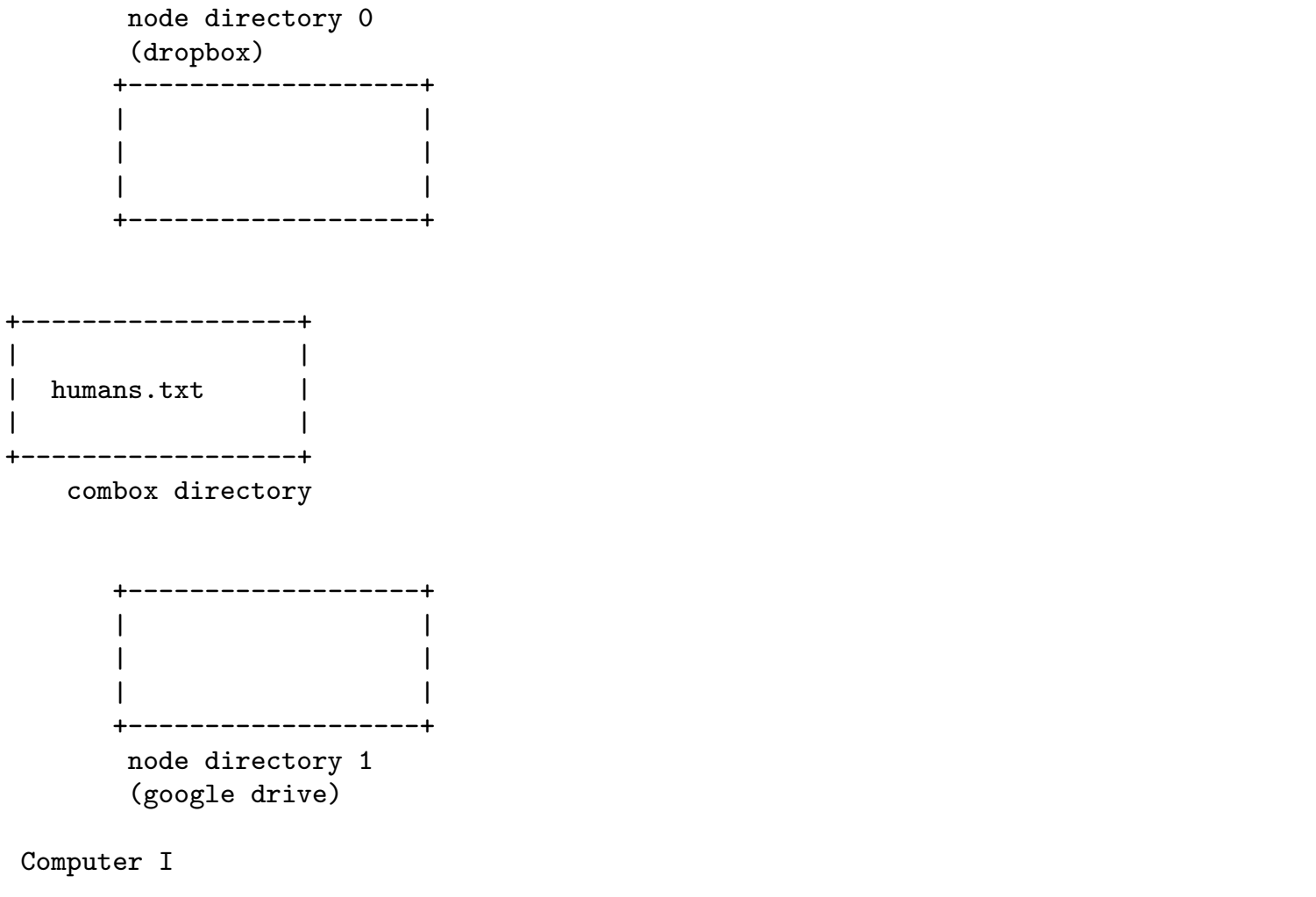
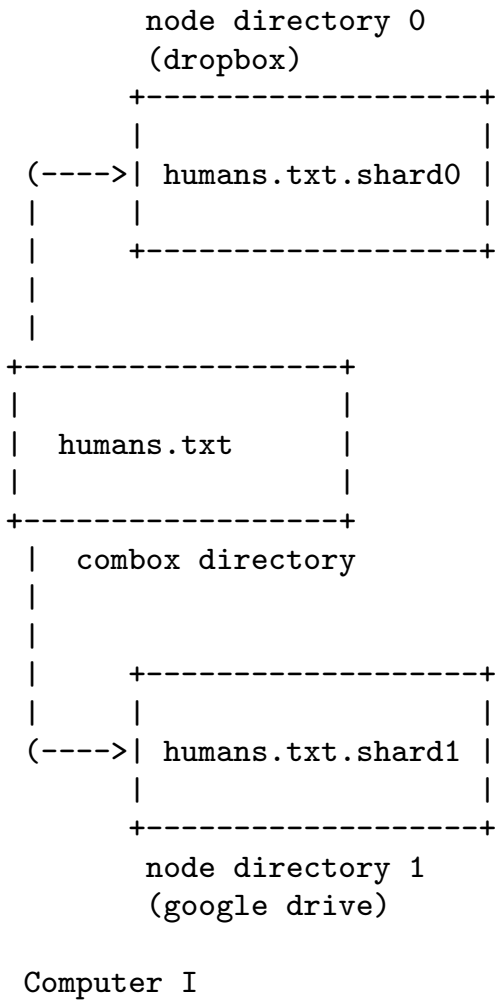
(dropbox)
combox directory
node directory 1
(google drive)
Computer I

combox


node directory 0
(dropbox)
humans.txt
combox directory
node directory 1
(google drive)
Computer I

combox


node directory 0
(dropbox)
humans.txt.shard0
humans.txt
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humans.txt.shard1
node directory 1
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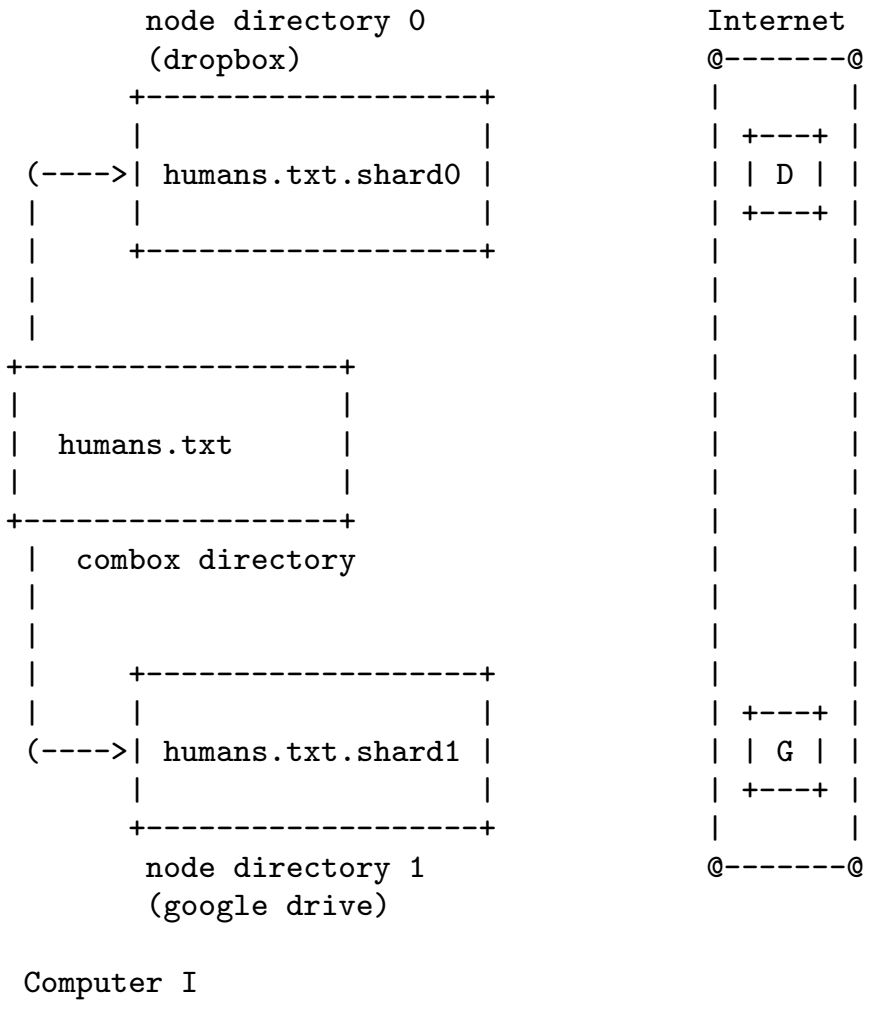
combox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Computer I
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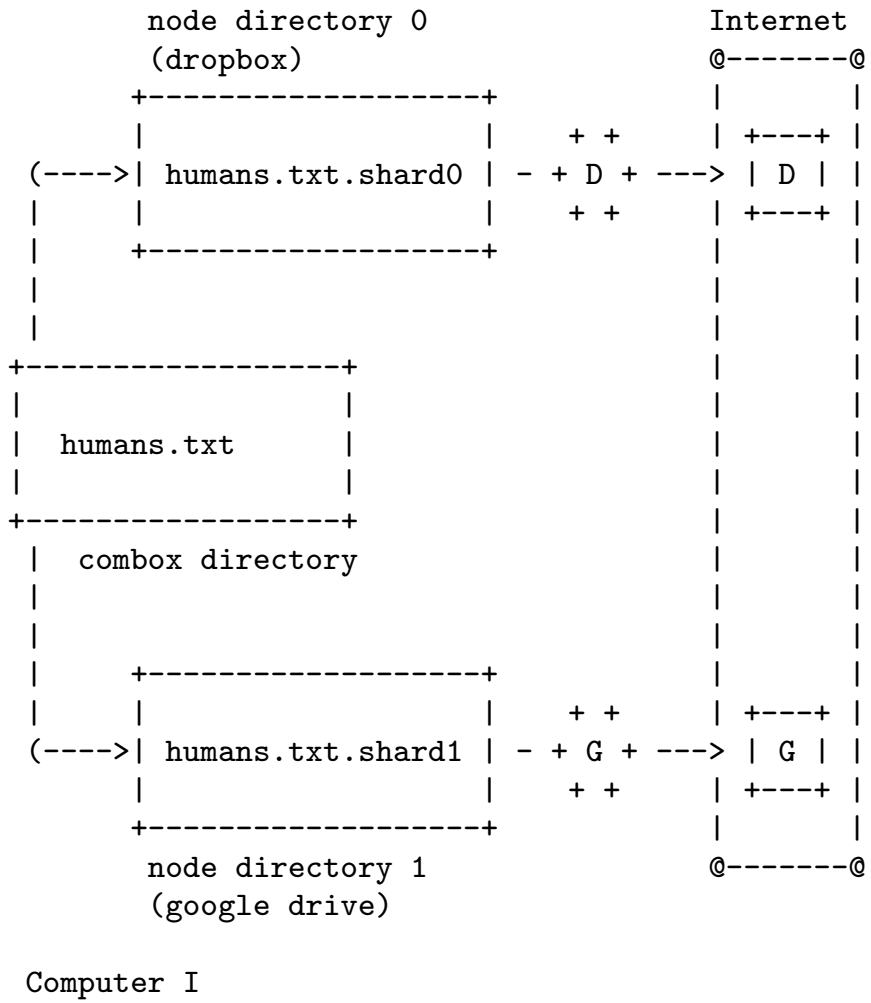
combox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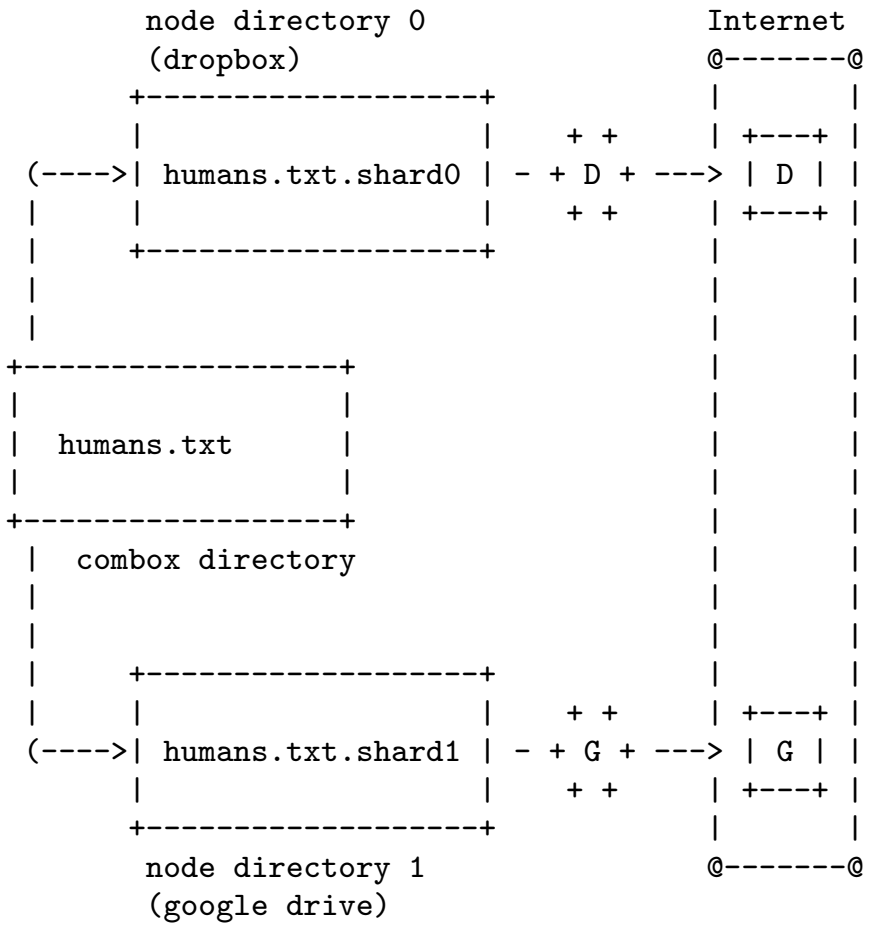
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Computer II

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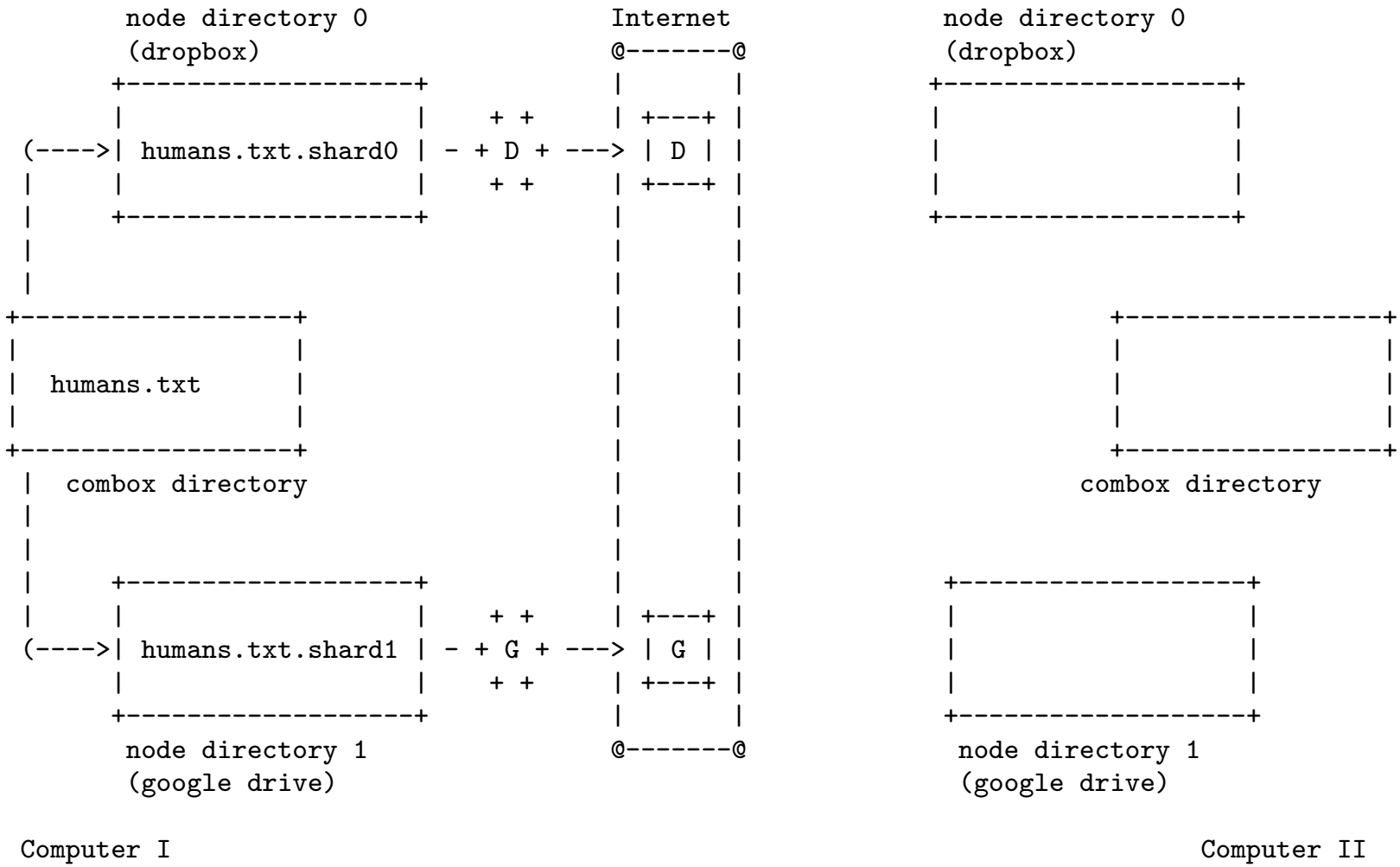
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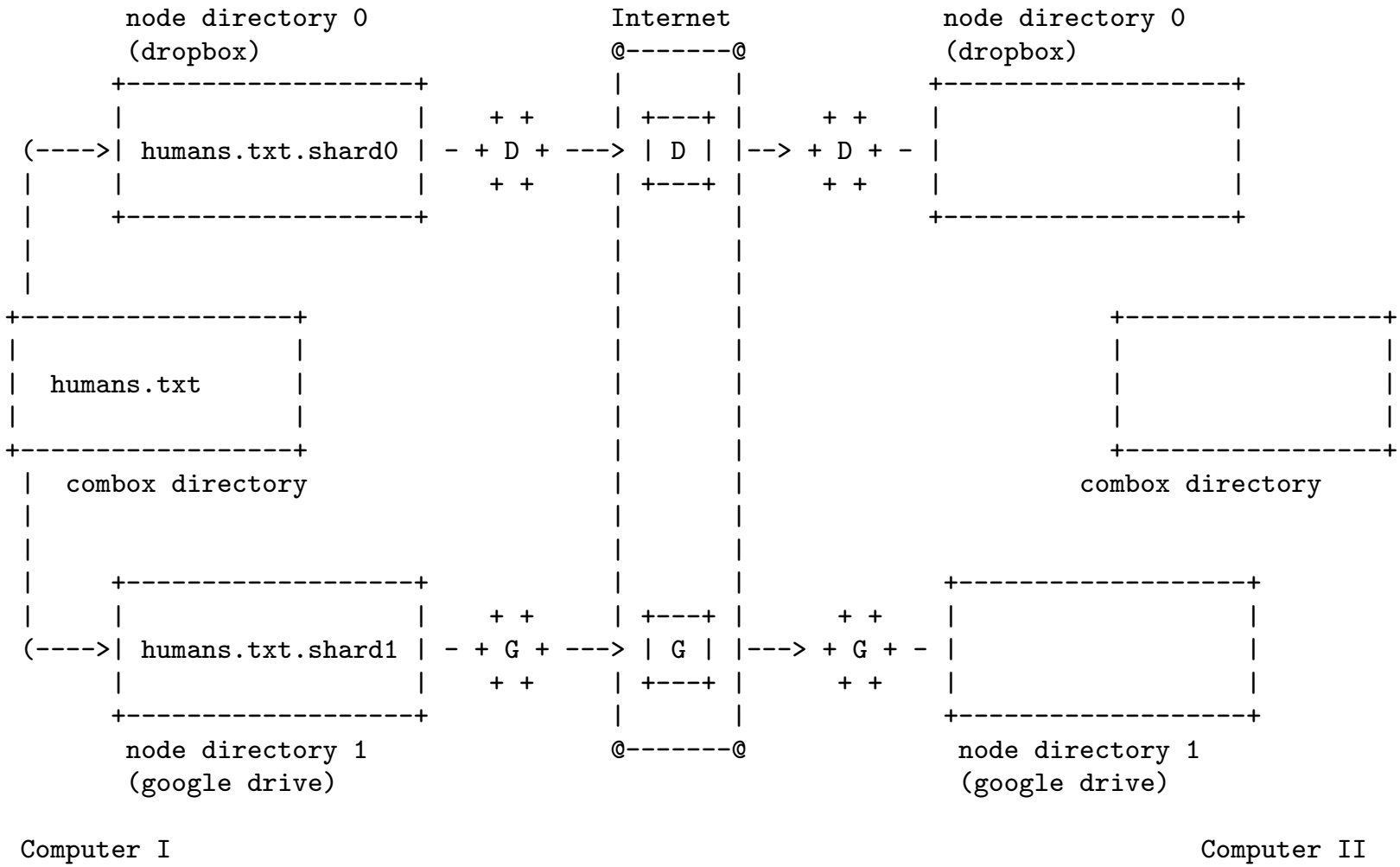
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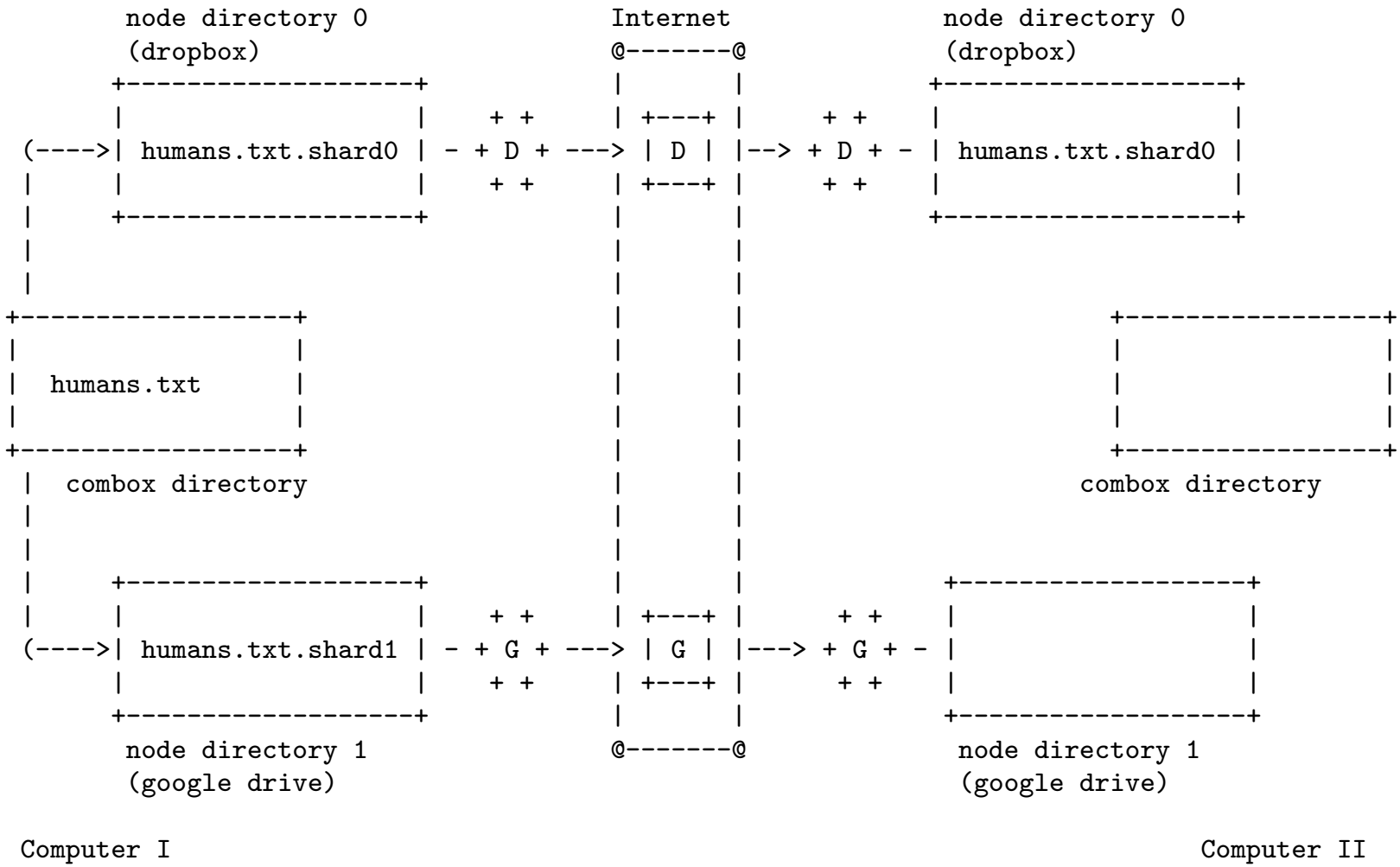
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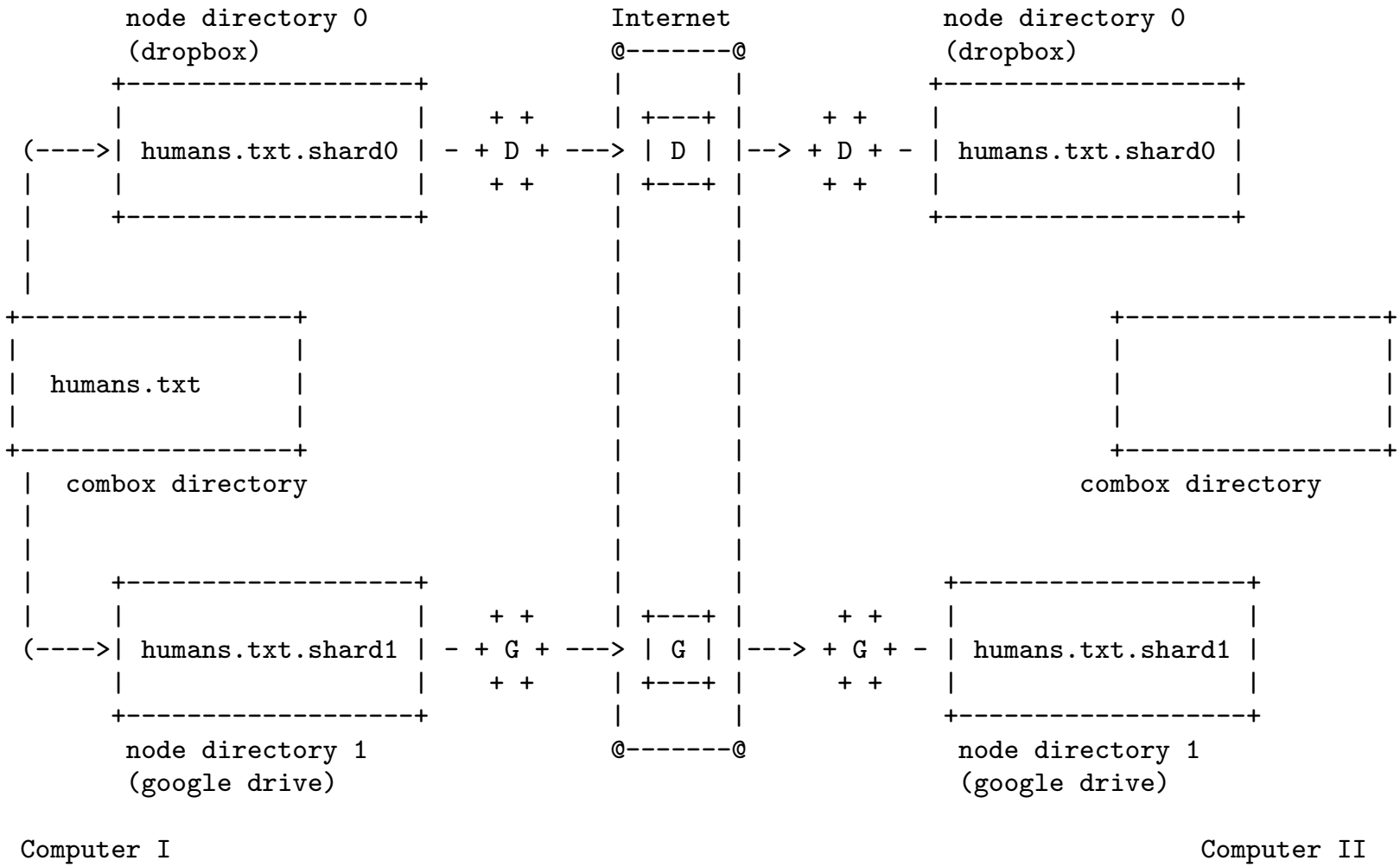
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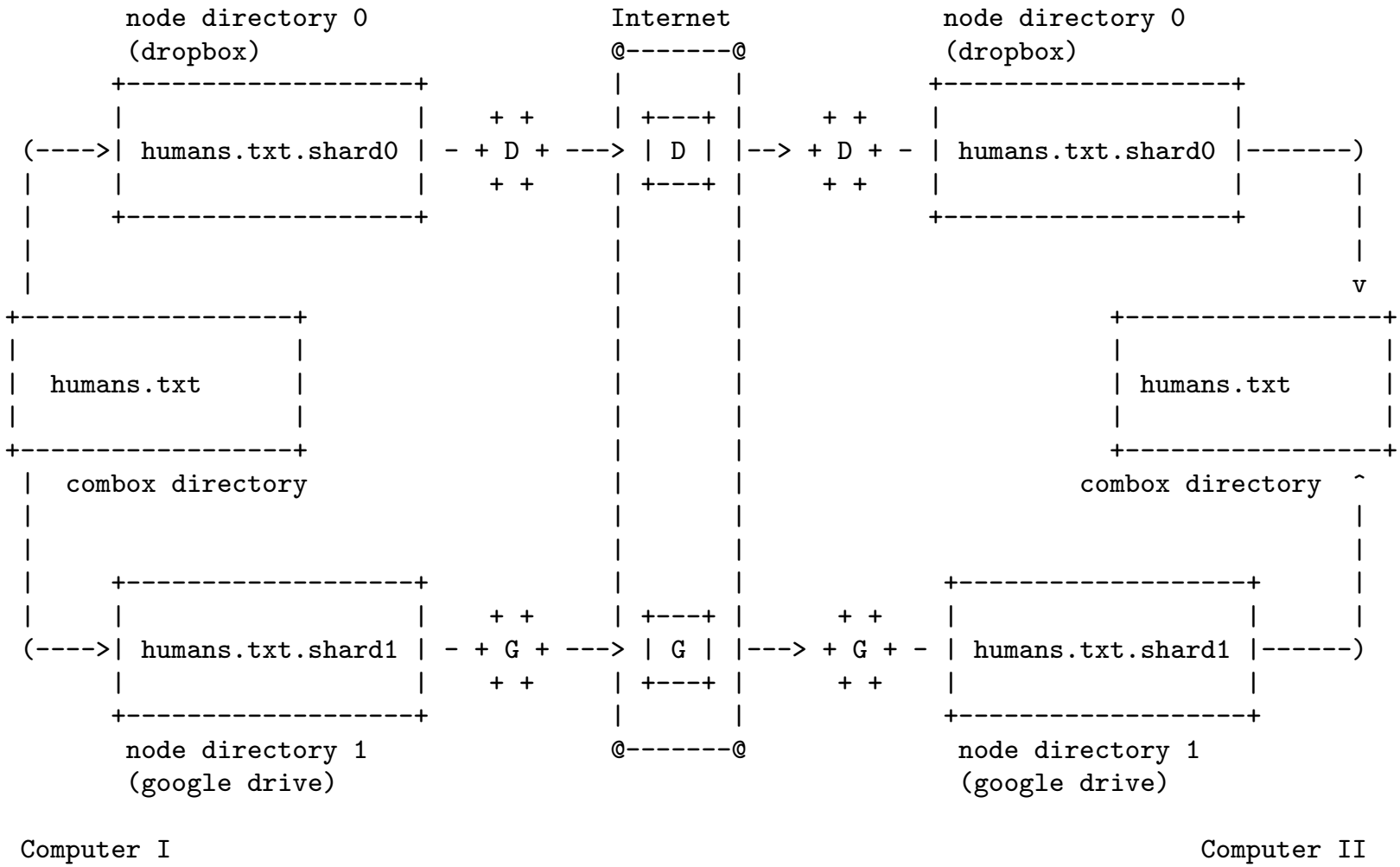
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humans.txt
combox directory
humans.txt.shard1
node directory 1
(google drive)
Computer I
Computer II

Vollmar's Combo-Box

- C#

Vollmar's Combo-Box

- C#
- SQL for tracking files

Vollmar's Combo-Box

- C#
- SQL for tracking files
- Microsoft Windows program

combox

- python

combox

- python
- Key-value data store for tracking files

combox

- python
- Key-value data store for tracking files
- python package, runs on GNU/Linux and OS X

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