Forban
a simple link-local opportunistic p2p free software
or
sharing your bookshelf everywhere

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Technology and society

"112. People anxious to rescue freedom without sacrificing the supposed benefits of technology will suggest naive schemes for some new form of society that would reconcile freedom with technology. Apart from the fact that people who make suggestions seldom propose any practical means by which the new form of society could be set up in the first place, it follows from the fourth principle that even if the new form of society could be once established, it either would collapse or would give results very different from those expected. " Industrial Society and Its Future (1995), Theodore Kaczynski

Introduction

- The legal framework hinders you to share with your neighbors or friends.
- The editors are trying to kill the conviviality of our societies
- and (worst) the Internet is starting to be controlled with the use of technologies.

Books In Our Societies

- Books are part of any free society.
- Books are part of any critical process that could improve our societies.
- Books that you cannot share are useless (e.g. DRM).
- Is the role of the librarian shifting to the reader with the introduction of digital books?
- Can everyone transport a library and play the role of the librarian?

Forban Started As a Discussion (November 2009)

- Can we do file sharing without the Internet?
- Why is it more easy to share with strangers than with your friends?
- Time of acceptance and protocol complexity?
- Security?
- Proximity and sharing? how to make it simple?

Basic Objectives

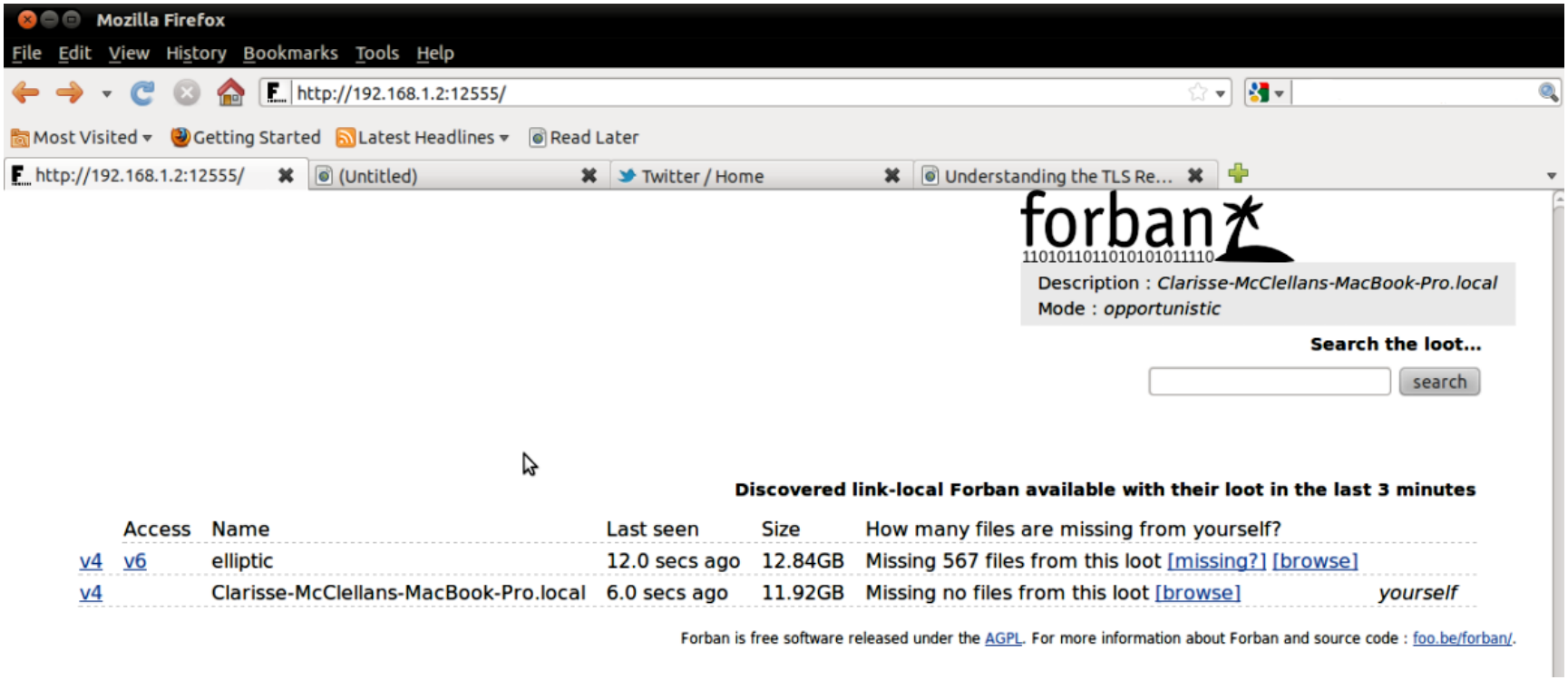
- Rely on HTTP protocol with minimal extension.
- We don't care too much about bandwidth use or optimization.
- Sharing should be possible independently of the files, formats or file structures used.
- Wireless, ad hoc or personal network are unstable by nature.
- Any programmer should be able to reimplement or remix the protocol.

Forban is an experiment. Good ideas are worthless if they are not executed and created. You can blame us, this is fine but show us the code...

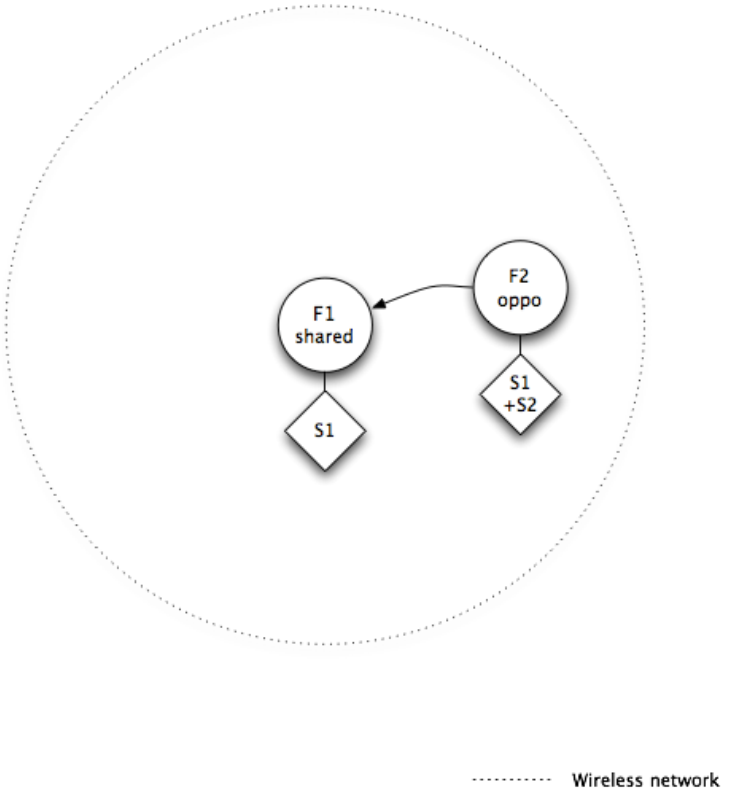
Forban Mode

- Opportunistic (default)
  - sharing and copying everything discovered
- Shared
  - sharing only
- Passive
  - cherry pick files discovered (using a web browser)

Forban Screenshot

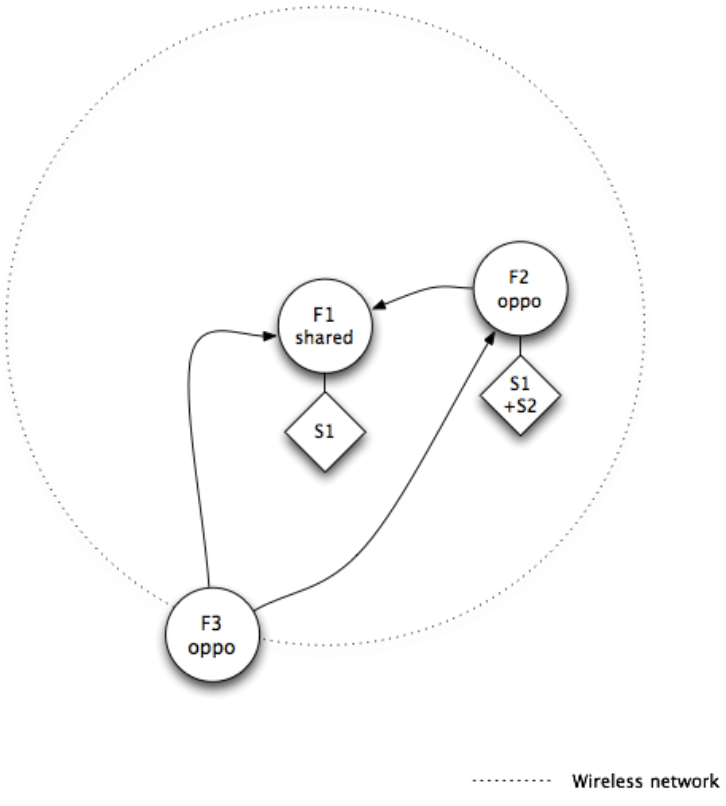


Modus Operandi 1/3



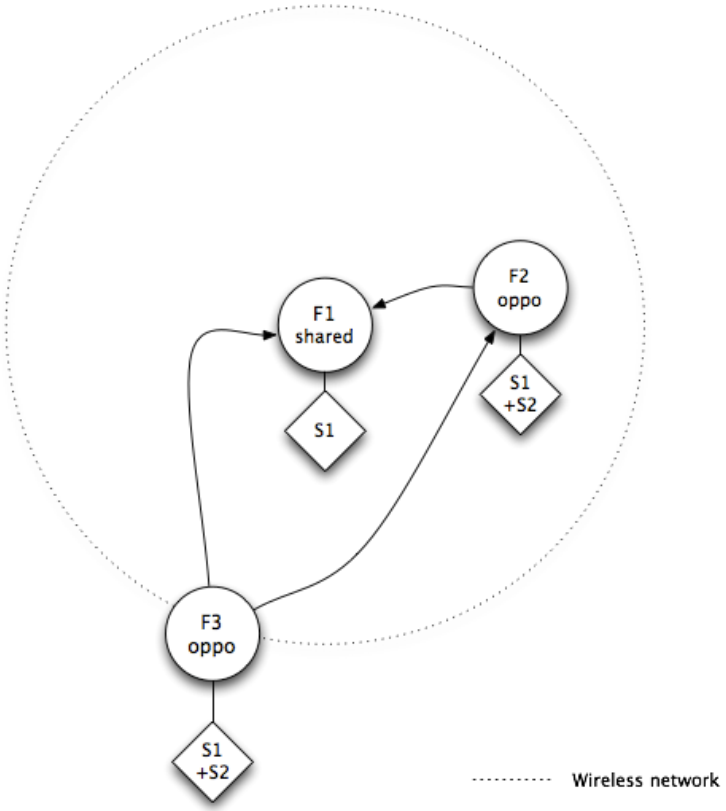
- 2 Forban nodes are in the same wireless network
- F1 is only sharing
- F2 is an opportunist (sharing and also copying)
- F2 has all the available files

Modus Operandi 2/3



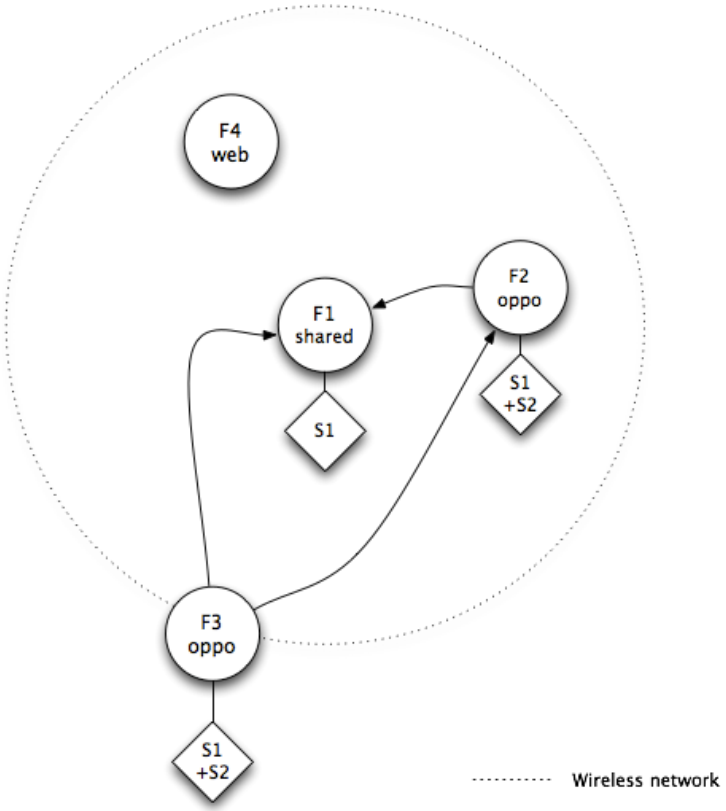
- 3 Forban nodes are in the same wireless network
- F1 is only sharing
- F2 is an opportunist (sharing and also copying)
- F3 is also opportunist (sharing and also copying)
- F3 has nothing to share
- F3 discovers F1 and F2 and is fetching the indexes

Modus Operandi 3/3



- 3 Forban nodes are in the same wireless network
- F1 is only sharing
- F2 is an opportunist (sharing and also copying)
- F3 is also opportunist (sharing and also copying)
- F3 got all files from F1 and F2

Modus Operandi



- 3 Forban nodes are in the same wireless network
- 1 passive web client
- F4 can use his web browser to get F1,F2 or F3 files

The Forban Protocol (version 1.0)

The Forban protocol in 5 lines

- Each Forban has an UUID (RFC 4122)
- Each Forban is flooding the network with an announce (UDP announce)
- Each Forban maintains a list on how to access the other Forban
- Each Forban is providing an index of the files available (HTTP)
- Each Forban has an interface to get a file from his index (HTTP)

The Forban Protocol (version 1.0)

The announce message

```
<sourceinterface_ipv4> -> 255.255.255.255:12555
<sourceinterface_ipv6> -> ff02::1.12555

forban;name;adulau shared forban;
uuid;cb001bf2-1497-443c-9675-74de7027ecf9;
hmac;e3c363965a22f365d6557a1f166d225d461b68bc
```

one-liner Forban discover

```
tcpdump -iany -t -p -n -l -A -s0 "udp and port 12555 and udp[8:2]==0x666f"
```

The Forban Protocol (version 1.0)

Getting the index

```
GET http://<sourceinterface_v4>:12555/s/?g=forban/index
...
InfoVis/AppliedSecurityVisualization.pdf,22121928
InfoVis/OReilly Slideology.pdf,9252536
Fiction/SciFi/4931-hackers_heroes_of_the.pdf,2761072
```

- The index includes recursively all the files available in the shared directory.
- The index is composed of the filename including a path along with the total size of each file.
- Everything available in the index can be fetched.
- The index is a text file without limitation.

The Forban Protocol (version 1.0)

Getting a file

```
GET http://<sourceinterface_v4>:12555/
 /s/?g=base64_urlsafe(<filenamefromindex>)&f=b64e
```

- This is a traditional HTTP download with 'Content-Disposition' header.

The Forban Protocol (version 1.0)

The opportunistic mode

```
foreach index in forban.discovered:
    compare the index with remote index:
        fetch missing files
```

- The opportunistic algorithm is quite simple and follows a brute-force approach.
- The file with the largest size is replicated among the Forban nodes. (e.g. file with the same name will be overwritten by the larger one)
- Filters on a name can be used to limit the copied files.

Do you want to share at Haxogreen?

Quick Install of Forban Python's Prototype

- **git clone git://github.com/adulau/Forban.git**
- **cd Forban**
- **./bin/forbanctl start**
- and open your web browser to : **http://127.0.0.1:12555/**
- To share some files, you'll just need to copy them in ./var/share/

What people do with Forban?

- Installing Forban on the PirateBox[1]
- Running Forban on the OLPC XO-1[2]
- Extending Forban to read and share Genesis library block
- Using Forban in a Chinese Rural area to share local information
- or an satellite terminal to share large file.

[1] https://github.com/MaStr/mkPirateBox-Forban

[2] http://www.flickr.com/photos/adulau/4469794896/

What's next?

- Handle duplicate files with different file names.
- Improve wireless usage (for blocked multicast/broadcast) and self-limiting Forban nodes.
- Help others to remix, reuse or abuse Forban and its protocol.
- Forban in a device, in a tshirt,... to ease local sharing.
- I'm currently writing go-forban, a Forban in Go. (for MIPS/ARM portability without Python dep)

Defense of conviviality is possible only if undertaken by the people with tools they control. Ivan Illich (1973).

Technology and society

"The crisis can be solved only if we learn to invert the present deep structure of tools; if we give people tools that guarantee their right to work with high, independent efficiency, thus simultaneously eliminating the need for either slaves or masters and enhancing each person's range of freedom. People need new tools to work with rather than tools that "work" for them. They need technology to make the most of the energy and imagination each has, rather than more well-programmed energy slaves." Tools for Conviviality (1973) - Ivan Illich

Pluriel
Jacques Ellul
Le bluff technologique
HACHETTE Littératures
CLIMATS
LE MANIFESTE DE 1971
L'AVENIR DE LA SOCIÉTÉ
INDUSTRIELLE
THEODORE KACZYNSKI
Galilée
L'immatériel
André Gorz
fayard
Œuvres complètes Volume 1
Ivan Illich
GNU Press
Free Software
Free Society:
selected essays of
Richard M. Stallman
introduction by
Lawrence
Lessig
Free Software Foundation
Peter Shapiro & Caipirinha Productions

Автор	Сообщение
bookwarrior	**Заголовок сообщения:** URGENT: Seedbox for Library Genesis for 1/2 year
не в сети **Зарегистрирован:** Сб янв 31, 2009 4:39 am **Сообщения:** 4422	Dear friends, since the torrent seeding situation is quite stagnated in LG, we've decided to speed it up and increase the number of LG year. This is due to the increased pressure from the "legal" world and massive leakage of LNU users to us: you all need b So, the X-date is **1 May 2012** when seeding will have started latest. Before that time please, **keep it quiet**, prepare -t can (in this time you'll surely download all LG). By the time the seedbox is ready, you need to be prepared to stuff up a **UPDATE**: Seedbox is running well, the end of the acceleration is dated **27 October 2012**. Try to download as much as y If the seedbox servers are not added automatically in you torrent-client, add them manually: **178.45.252.88:9095** **178.45.252.87:9094** **178.45.252.84:9093** **178.45.252.84:9092** Good luck on you and pass this note to your trusted friends at academia. bw show
Вернуться к началу	профиль

Q and A

- Thank you and don't forget to share.
- Q&A
- http://www.foo.be/forban/