

# Public and private BitTorrent communities: A measurement study

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# Abstract

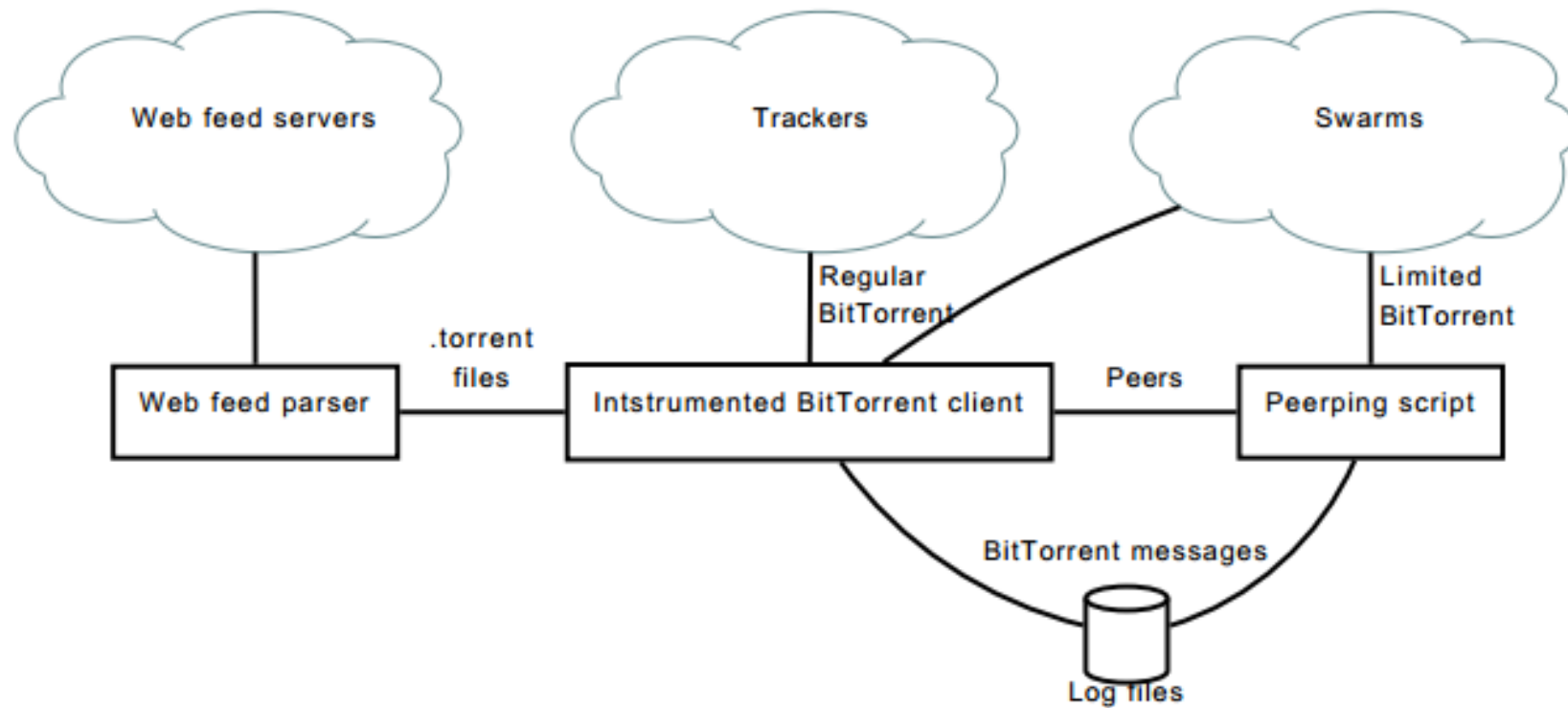
Results of extensive measurements of more than half a million peers in **five communities**, ranging from highly popular and well-known public communities to elite private communities that can only be joined by invitation

# BITTORRENT COMMUNITIES

- Central servers
- They run trackers
- Simple processes that keep track of the users that are downloading or seeding content and mainly serve to provide peers with addresses of other peers interested in the same content

Community	Sharing policy	m: # members u: avg # users t: # torrents (where known)
The Pirate Bay (public)	Unlimited downloading	m: 4,000,000 u: 21,000,000 t: 2,200,000
EZTV (public)	Unlimited downloading	u: > 2,000,000 t: 5,490
TVTorrents (private)	1 credit / byte down, 1 or 1.5 credit / byte up, balance $\geq 0$	t: 13,000
TorrentLeech (private)	seed each file for 24 hrs or until ratio $\geq 0.4$ , overall ratio $\geq 0.4$	m: 178,000 t: 24,000
PolishTracker (private)	seed each file for 48 hrs or until ratio $\geq 1.0$ , overall ratio $\geq 0.55$	m: 20,000 t: 5,750

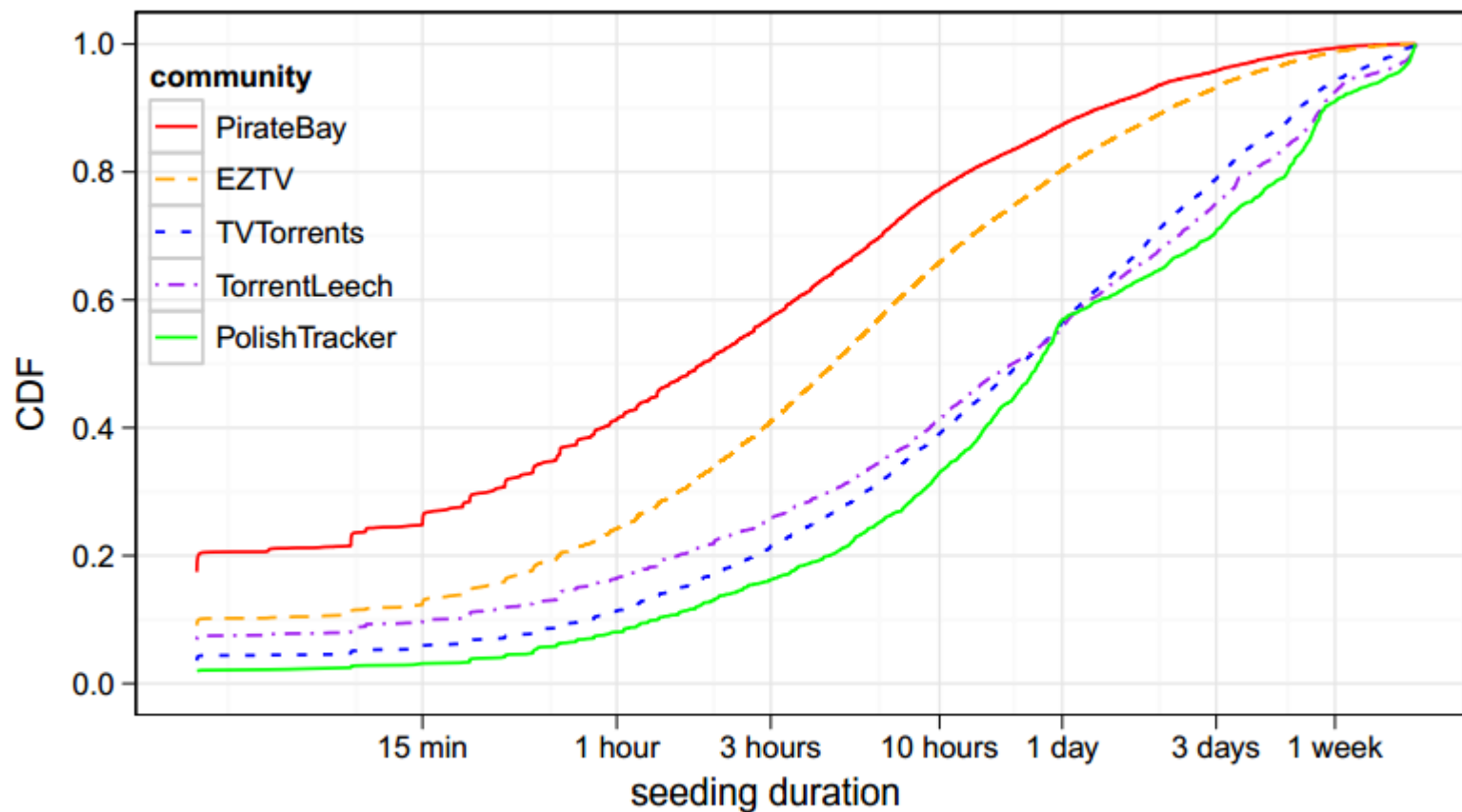
# The infrastructure



# MEASUREMENT RESULTS

- Download performance
  - i. The median download speed in the **private** ones is **3–5 times higher** than in the public ones
  - ii. 7% avg. speed 10 Mbps or higher
- Connectability
  - i. EZTV has **47%** unconnectable peers **vs.** PolishTracker has only **20%**
- Seeder/leecher ratio
  - i. On average, the public communities had only 2–7 seeders per leecher
  - ii. In The Pirate Bay, as much as **47%** of our observations were ratios **below 1**
  - iii. In **private** communities are at least **10 times as large** as those in public communities
- Seeding duration
- Fraction of data supplied by seeders
  - i. The results for TVTorrents show that after about 2 hours, virtually all of the data comes from seeders
  - ii. Apparently, tit-for-tat is almost irrelevant in such communities

# The CDF of the seeding duration per community



THANK YOU