

BitTyrant: Exploit Altruism

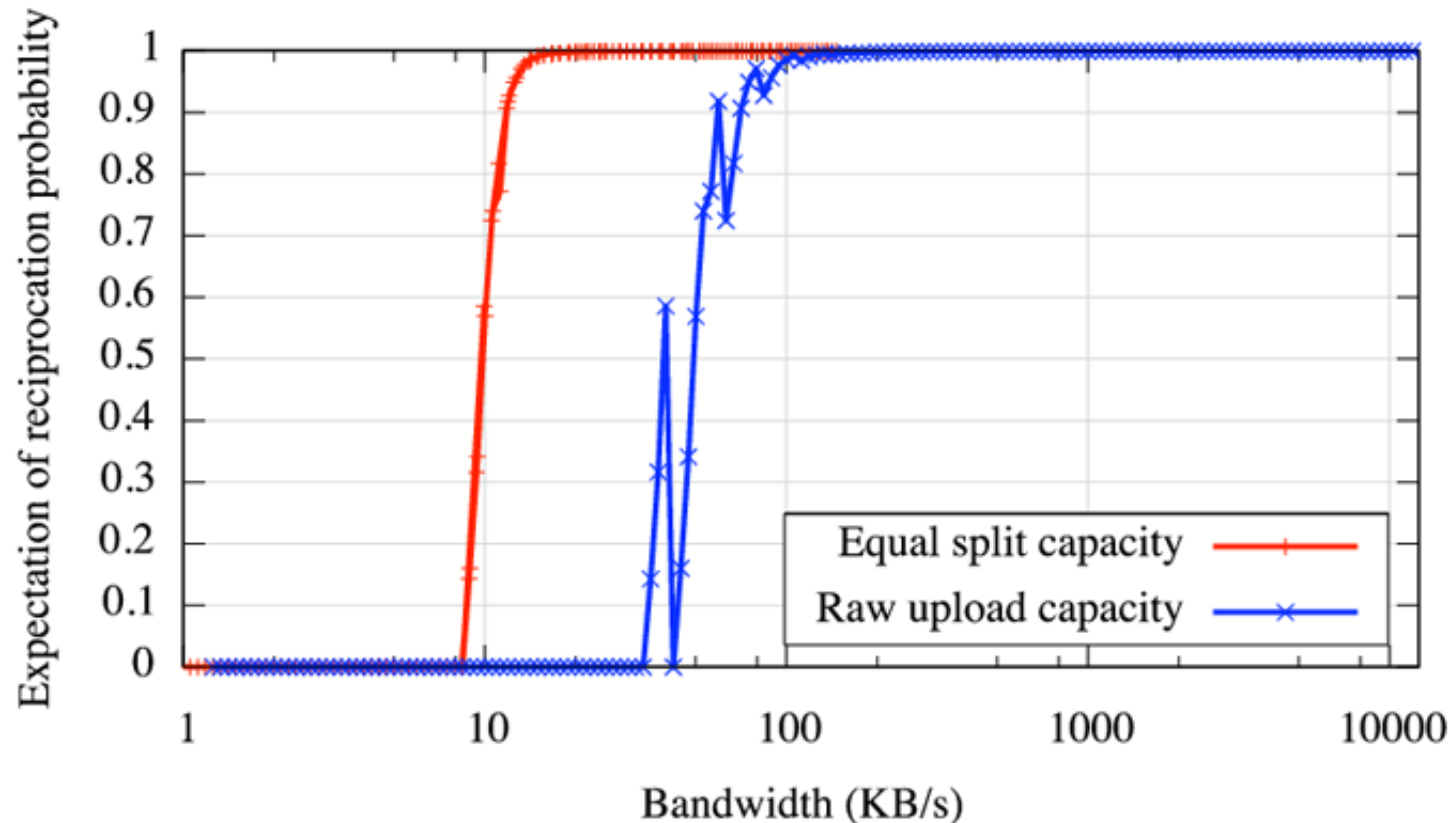
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BitTorrent

- Maintain an active set based on rate
- Tit-for-tat strategy
 - Favors peers who sends back data rapidly
- Optimistic unchoking
 - Randomly choose a small number of peers
 - Help bootstrap of new peers

Observation

- Reciprocation from Q to P
 - The rate of data sent from P to Q
 - > The rate of data sent from others to Q



BitTyrant: exploit altruism

- Strategy
 - Maximize reciprocation bandwidth
 - Maximize number of reciprocating peers
 - Deviate from equal split
- Algorithm
 - For p , d_p – download rate, u_p – upload rate
 - Rank peers by d_p / u_p
 - Estimate d_p by observed rate
 - Dynamically adjust u_p by multiplicative factors

Questions and Discussions

- Evaluation:
 - Why ignore files larger than 1GB?
 - Why only used 5MB files for experiment?
 - Any metrics about fairness?
- Long-term performance
- Do nowadays popular P2P clients adopt the strategy from BitTyrant?

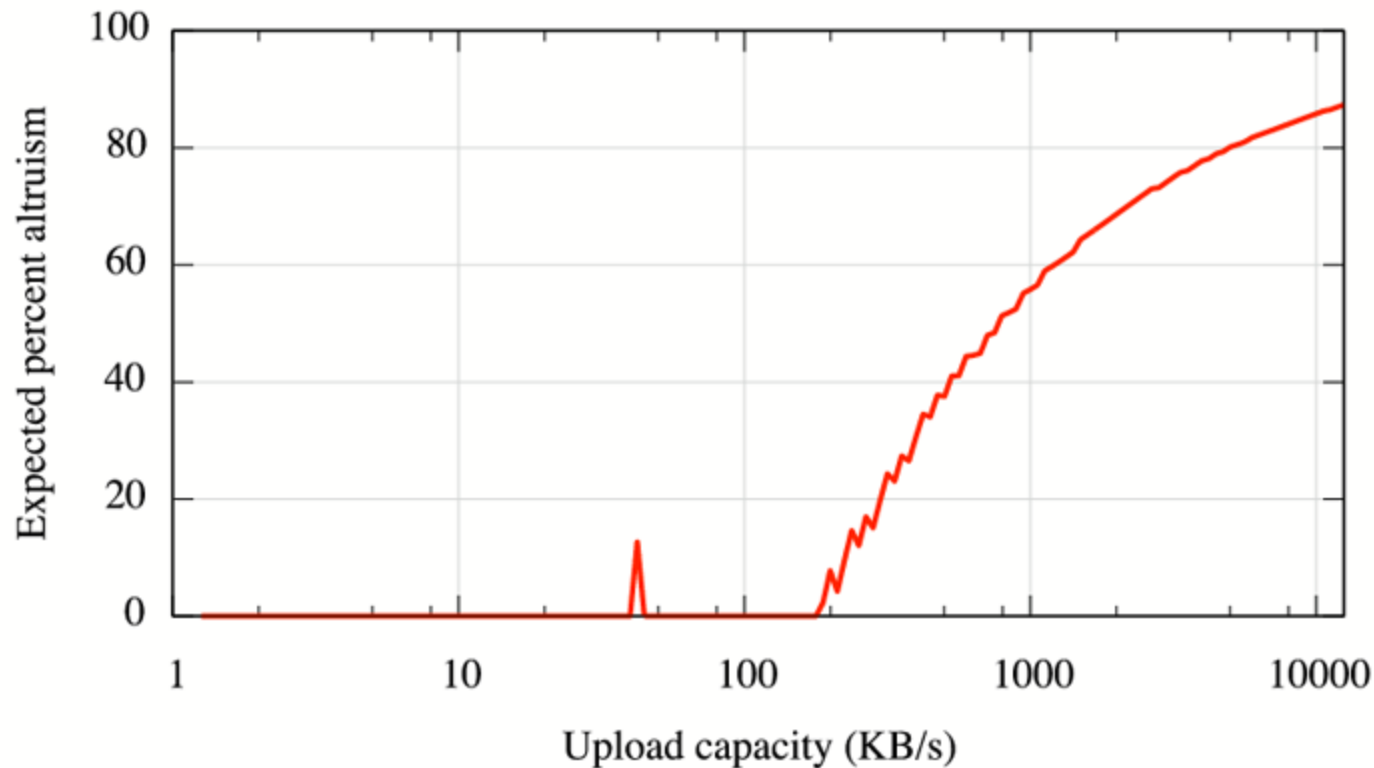
Other Discussions

- Membership and Authentication in P2P
 - Proof –carrying authorization
 - With centralized server?
- P2P and ISPs
 - Cooperation between P2P system and ISPs?

End

Observation

- High upload capacity peers can enhance performance by using strategy



Bad Cases

- Low benefit for low capacity peers in multiple swarms cases
- Lengthy bootstrapping period
 - Will it cause new users to contribute more?
- Peering relationship not stable
 - Churn is high?

Evaluation

