

Adding BitTorrent support to BOINC

What?

When?

Who?

How?

Why?

What is BitTorrent?

Wikipedia:

“BitTorrent is a peer-to-peer file sharing (P2P) communications protocol. BitTorrent is a method of distributing large amounts of data widely without the original distributor incurring the entire costs of hardware, hosting and bandwidth resources. Instead, when data is distributed using the BitTorrent protocol, each recipient supplies pieces of the data to newer recipients, reducing the cost and burden on any given individual source, providing redundancy against system problems, and reducing dependence on the original distributor. [...]”

- Boils down to:

- 1) Protocol, different from HTTP
- 2) Scales well on large masses of data
- 3) Less costly for the original distributor

Why BitTorrent?

BOINC site:

“You need a 'Low data/compute ratio’
and

“if your application produces or consumes more than a gigabyte of data per day of CPU time, then it may be cheaper to use in-house cluster computing”

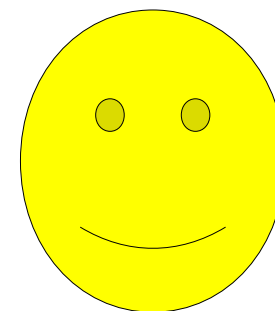
Definition of low = determined by your outbound network capacity

- Who will benefit?
 - Projects on small connections (<1Mbit/s)
 - Projects with large applications (>5MB - Athena?)
 - Projects that update their apps often
 - Projects with big shared WU files

Why *not* BitTorrent?

- “It's just 'cool' but not really useful”
- “Bittorrent introduces viruses, keyloggers and trojans”
- “Noone is going to use it anyways
who would like to waste their network resources?”
- “BOINC credibility suffers if we adopt this 'bootlegging
MP3' system”
- “This would make BOINC into a geeks-only system”
- “Bandwidth is not an issue” [the Google syndrome]
- “You will be arrested for running BOINC”

Information is important
People have been misinformed



Now, really, why not?

Network quality deterioration:

- ToS, reactive pinging, adaptive bw.
(bonus: neighborhood discovery)

Blocked on ISP/router level

- Statistically still useful (don't need everyone)
- Webseeds always active

Nothing is foolproof – they blame us

- Document important prefs, automated setup guide

Must be configurable

- **Ways to contribute** (per project?):
 - Always share
 - Ratio based
 - (ie. stop sharing when uploaded X times as much data as has been downloaded)
 - Share only while downloading
 - Only use BT for downloading, don't upload (default?)
 - Never use BT (default?)
 -
 - Upload limit (units?)
 - Download limit
 - Time-of-day
 -
- } This is already available

When?

•Serverside:

- Tracker and .torrent generator already available
- Can be obtained through SVN in `html/bt/*`
(requires PHP5, MySQL4, Apache2)

Clientside:

- libTorrent already available
- Integration with BOINC client yet to be done (anyone?)