

TJHSST Senior Research Project Implementation of a P2P Client Utilizing the Bittorrent Filesharing Protocol 2006-2007

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Abstract

The Linux operating system currently lacks a fully featured alternative to the Azureus Bittorrent client. The goal of this project is to implement a fast, low memory graphical Bittorrent client for Linux.

Keywords: Bittorrent, P2P, Linux, Azureus

1 Goal

The purpose of this project is to implement an alternative Linux Bittorrent client that has low system requirements and high performance. The current leading Bittorrent client for Linux is somewhat bloated, easily taking over 200MB of system memory. This alternative client will provide a full implementation of the Bittorrent protocol and attempt to supercede the Azureus client. Ideally, it would feature both a command line and a graphical user interface.

2 Procedure and Methodology

The C++ language will be used to write the Bittorrent client. Java is not an option because it a goal is low memory requirements. C is faster than

C++, but takes much longer to write. Additionally, it is much easier to write graphical interfaces in C++ compared to C, and C++ also has a number of useful libraries that can be used to aid development.

3 First Quarter Goals

The goal of the first quarter is to research the Bittorrent protocol and implement a rudimentary command line client using external Bittorrent libraries. This should get at least a working skeleton client in place, but without any advanced features. A list of desired features and future improvements will be compiled for later use.

4 Second Quarter Goals

The second quarter will be spent either writing my own Bittorrent libraries or improving upon existing ones. The focus of the coding will be on performance and correctness. Some advanced features may be implemented as well.

5 Third Quarter Goals

The third quarter will be spent writing a graphical interface and implementing the rest of the advanced features found in other Bittorrent clients. This time will also be spent on bug fixing and further performance tuning and testing. A list of features and performance metrics of available Bittorrent clients will be provided for comparison.