BitTorrent Client

Context

BitTorrent (abbreviated to BT) is a communication protocol for peer-to-peer file sharing (P2P) which is used to distribute data and electronic files over the Internet. BitTorrent is one of the most common protocols for transferring large files, such as digital video files containing TV shows or video clips or digital audio files containing songs.

-- Wikipedia

Description

The main purpose of this project is for you to create your own BitTorrent client compatible with other famous clients available on the web (like uTorrent or Deluge). It will challenge your network knowledge to the great beyond!

Prerequisites

- Languages: **C/C++** any revision
- Operating system: **Linux/Unix**
- Compilation: **docker-compose && docker-compose up**
- Libraries: **STL**, **ncurses** (CLI), and whatever libraries for the UI part.

Functional description

- Basic client – CLI **(mandatory)** – 16 points
    - Add / Stop / Resume / Share a torrent file
    - Basic information
        - Data: files, pieces, downloaded, uploaded, ratio, and both current speed
        - Seeders and Peers (available and connected to) and list of connected peers
        - Tracker information (status, announce)
- Advanced client – CLI
    - Run as a daemon with proper handling by the system – 2 points
    - Handle multiples torrent file simultaneously – 2 points
    - Show current detailed status – 2 points
        - Show global view of all current torrents managed based of the information above
        - Sort feature by status (paused, in-progress, seeding, stopped, errors)
        - Toggle detailed view of a selected torrent
    - Multitrackers feature – 2 points
    - Configuration settings
        - Bandwidth (global and per torrent) – 4 points
        - Ports configuration (incoming and outgoing) – 1 point
        - Proxy configuration – 1 point
        - UPnP / NAT PMP / PEX / LSD / DHT – 2 points each
        - Encryption (inbound and outbound) - 2 points
- Remote access (including adding remotely torrent file) – 4 points
- Graphical Interface using GTK or Qt for example - 2 to 8 points (progressive)
- Web interface – 2 to 12 points (progressive)
- Others operating system
    - Windows – 4 points

Remember to have fun and only using it for legal stuff!