

entity has the ability to control the operation of the central server, and as a result, this entity can affect the operation of the service. For example, if a central server is accessed or used in an unauthorized manner, the server operator can deny access to unauthorized users, or completely shut down the server. In contrast, because the Gnutella network has a decentralized structure where all peers play similar roles, no one peer has the ability to control the network or to shut it down without the willing acquiescence of the great majority of other peers in the network. In other words, because the Gnutella network is a decentralized collection of individually owned and operated peers, it is self-organizing and self-sustaining, and operates solely based on the collective decisions of its peer members. No one entity or peer has the ability to dictate the operation of the entire network, or for that matter, to completely dictate the operation of any other peer owner/operator in the network. Gribble Decl. at ¶ 34.

12. To operate, the Gnutella client software, like LimeWire, must first “bootstrap” itself onto the Gnutella network. Once it has been bootstrapped, client software can send queries into and receive queries from the Gnutella network, and participate in the transfer of files between peers in the network. Gribble Decl. at ¶ 36.

13. Bootstrapping is the process through which a Gnutella peer finds other peers in the Gnutella network with whom it can communicate. Once a peer has been bootstrapped, it knows of a collection of other peers and ultrapeers that are willing to exchange Gnutella messages with it. A bootstrapped peer is a fully functioning member of the Gnutella network; it has grafted itself into the Gnutella network topology, and it is able to search for, download, and make available files. Gribble Decl. at ¶ 37.

14. To help peers bootstrap, the Gnutella network includes some nodes called “UDP host caches,” or UHCs, that serve to introduce peers and ultrapeers to each other. By participating in the Gnutella network, over time a UHC learns about peers, ultrapeers, and other UHCs. A peer can ask a UHC for a list of other peers and ultrapeers that the UHC knows of; using this list, the peer can then attempt to initiate a connection to one of these other peers in order to join the network. Gribble Decl. at ¶ 38.

15. Gnutella client software will typically ship with a list of UHC nodes. The first time that a user launches the software, the client will contact this initial list of UHC nodes in order to bootstrap itself. Alternatively, most Gnutella clients allow the user to manually bootstrap by typing in the DNS name or IP address of other peers and ultrapeers in the Gnutella network. Once bootstrapped, a peer uses the Gnutella protocol itself to maintain a fresh list of UHCs and other peers. As long as the user continues to use the software periodically, a Gnutella client, like LimeWire, will replenish itself with a fresh set of peers to communicate with, as well as UHCs to fall back upon. Gribble Decl. at ¶ 39.

16. When a user wants to find a file on Gnutella, the user types a search query into their Gnutella client software. On behalf of its user, the client software will send a message to its ultrapeer, asking the ultrapeer to help it find matching files. An ultrapeer uses a number of techniques to locate files within the Gnutella network that match the query. Using the “Query Routing Protocol” (“QRP”), an ultrapeer will forward the query to those of its leaf nodes that are likely to have matches. Using “Dynamic Querying” (“DQ”), an ultrapeer will slowly broaden the search by relaying the query to additional ultrapeers, and transitively, to those ultrapeers’ leaf nodes. Gribble Decl. at ¶ 40.

17. If a Gnutella peer receives a query that matches a file that it is currently sharing, the peer will generate response “query hit” messages that include “metadata” about the matching files. Metadata is simply data describing a file and its contents. For example, the metadata associated with a music file might include the file name, artist, track title, musical genre, album name, and track length. This metadata typically includes information such as the IP address of the host that has the file, the size of each matching file, the name of each matching file, a hash fingerprint of each matching file, and other type-specific information about matching files. A query hit message contains information that is intended to be displayed to the user that initiated the query, as well as information that is needed by the user’s client software to find and download the file if the user so chooses. Query hit messages flow back to the peer that initiated the query, either directly over the Internet or indirectly through the peers’ ultrapeers. Gribble Decl. at ¶ 41.

18. As the Gnutella network processes a query and returns a set of query hit messages, the user’s client software will display a list of files that match the queries the user has issued. If a user chooses to download one of those files, the Gnutella client software will initiate a transfer of the file from one or more of the peers that possess it. Gribble Decl. at ¶ 44.

19. In the simplest case, a peer that wants to download a file will initiate a network connection to one peer that has the file, causing the file to be transferred directly between these two peers. Since frequently requested files can usually be found on many peers, Gnutella clients often include the ability to transfer content via a “swarming protocol,” in which pieces of the file are downloaded concurrently from multiple remote

peers. Swarming increases the performance of transfer, since the downloader can potentially enjoy the aggregate upload rate of all of the peers participating in the swarm. Gribble Decl. at ¶ 45.

20. The Gnutella protocol itself does not provide a software distributor, such as LW with any mechanism to control or supervise acts of direct infringement. Acts of direct infringement involve the peers that transfer those files across the network. The Gnutella protocol itself does not give a software distributor, such as LW the ability to observe these acts of direct infringement, let alone to control them. Gribble Decl. at ¶ 48.

21. A Gnutella software distributor provides client software to users. Once the user has downloaded the software, the distributor need not interact with the user or the user's client software again. Thus, a Gnutella software distributor does not need to play an operational role on the Gnutella network. Gribble Decl. at ¶ 49.

22. The client software can interact with peers, ultrapeers, and UHCs run by other parties participating in the Gnutella network. If a user chooses to perform an infringing act, the user's computer and network, and the computers and networks of the peers from which the infringing file is downloaded, provide the computing resources that power the infringing transfer. Gribble Decl. at ¶ 50.

23. There is a diversity of content that is made available via Gnutella. Gnutella itself supports the publication and transfer of any kind of content; the nature of the files that are published, searched for, or transferred is determined by the users of the network and what they choose to do. In many regards, this is similar to the Web: Users can choose to make any kind of file available by placing it on their Website, and other users can elect to search for and download these files. Gribble Decl. at ¶ 51.

24. The LimeWire client software is a Gnutella- and BitTorrent- compliant client implemented in the Java programming language. There are two versions of the LimeWire software. LimeWire “basic” is free software, while the slightly enhanced LimeWire “Pro” software must be purchased. LW maintains both versions of the software. Gribble Decl. at ¶ 60.

25. The LimeWire client software has been released as open source. As a consequence, anyone can download its source code, create derivative works based on it, and either use the derivative code themselves or redistribute it to others. Several Gnutella clients are available that are derivatives of LimeWire’s code. Gribble Decl. at ¶ 62.

26. Because the source code is open, LW does not have full control over how its software gets used. For example, there is nothing preventing a technologically savvy user from downloading the source code, eliminating some features from the code base, optimizing some aspects of how the software behaves, and then compiling and running this modified software. Gribble Decl. at ¶ 63.

27. To begin using LimeWire, a user must first download a LimeWire installer program to her computer, and then execute the installer, which can be downloaded by visiting the “Download.com” website (at <http://download.com>) that is owned and operated by CNET Networks, Inc. In addition to being available through Download.com, the LimeWire installer can also be accessed from LW’s website. Once the user has downloaded the LimeWire installer, the user must launch the installer. The installer places various files in different folders on the user’s computer. At this point, the user can go ahead and launch the LimeWire client software itself. Gribble Decl. at ¶ 65.